COMPULAR Only 50p.

9-15 October 1986

Vol 5 No 41

Amstrad profit soars to £75m

Full details on page 4

PLUS TWO REVEALED

We lift the lid off the new Spectrum

ST ARENA

Check out Software Hotlines for details

NEWS DESK

Amstrad show report

Cool welcome for Commodore 64C

Amstrad ban on copying programs



HARDWARE REVIEW: THE NEW

TATUNG EINSTEIN 256

See page 18

The £2.000 Movie Quiz: entry form inside

"GAMES AT THE SPEED OF LIGHT."..



SHOCKWAY RIDERS are the pick of the street gangs - ATHLETIC, AGGRESSIVE & ARROGANT - as they cruise along the triple-speed moving walkways that circle the great MEGACITY'S of the 21st Century. THE ULTIMATE AIM OF FYERY RIDER stop or "FULL CIRCLE" - 100 that, he must fight off the Block Boys, the Cops and the Vigilantes—as well as negotiating the Speed.

Traps and Rider Ramps receited by the angry local residents!

SHOCKWAY RIDER is the most original arcade game of the year

THE ULTIMATE FUTURE SHOCK!!

LIGHTFORCE AVAILABLE SEPT. '86 SHOCKWAY RIDER AVAILABLE OCT. '86

SPECTRUM £7.95
AMSTRAD & COMMODORE £8.95

FASTER-THAN-LIGHT

FTL FASTER THAN LIGHT, CARTER FOLLIS GROUP OF COMPANIES, SEDGLEY ROAD EAST, TIPTON, WEST MIDLANDS DY4 7UJ. Tel: 021-520 2981 | 4 lines!

Contents

GAMES

Software

12 Adventure Corner Tony Bridge looks at the Royal spoof, HRH from Eighth Day

13 Adventure Helpline 14 Reviews Service the first game from new company Thalamus, goes through the Popular grill, as does The Inheritance from Infogrames, and Superior's Strvker's Run.

16 Arcade Action

The complete solution to Memenary - The Second City hits the home straight. Includes this week's Gallup Top Twenty.



◀HARDWARE



18 Finstein 256

Tatung has launched the follow-up to the original Einstein - The Einstein 256, complete with built-in 3 inch disc drive and colour monitor. All for £399 Duncan Fyans has the details

21 Spectrum Plus 2 Andy Pennell brings you the definitive low-down on the Spectrum Plus 2 internal changes and all

min Lund Day then

SOFTWARE

22 Macro Manager

A desk top utility for your Atari ST, comprising diary, calculator, calendar, card file and alarm system.

Many similar utilities leave one asking if they're really any more useful than real diaries or calculators. but Duncan Evans found Macro Manager more sensible than most.

◆PROGRAMMING

23 BBC/Electron Continuing Mark Slater's Soccer pro-

gram. They'll be typing this one in at Old Trafford

24 Spectrum Get the best from your Ram disc. 25 Commodore 64 The final part of Minz.

26 OL Utility procedures for your QL.

29 Bytes and Pieces

27 Amstrad 6128

Want a Ram disc for your 6128? Well, here it is, courtesy of Brian

43 Peek & Poke

REGULARS

4 News Desk 10 Letters

34 Communications

35 Competition

If you want a Spectrum Plus 2, a Star Micronix printer, or a Mastertronic Magnum joystick, look no further

Editor Christine Erakine News editor John Lettice Features editor John Cook Technical editor Duncan Evens Production editor Michelle

37 Soundcheck

44 New Releases 46 Ziggurat, Hackers

State Charlis Estate Neve exit (2014) Ann Lattice Settation with School Charlis Set (2014) Charlis Set (2014) Charlis Set (2014) Charlis Septiments (2014) Charlis Set (2014) Charli

Popular Computing Weekly. Tel: 01-437 4343.



low to submit articles Articles which are submitted for publication should not be more than 2000 words long. The articles, and any Accuracy Popular Computing Weekly cannot accept any responsibility for any errors in programs we publish, although we will always

Amstrad nets £75m profit from PCW

AMSTRAD turned in another spectacular set of figures last week, showing profits up 273 per cent to £75 million, for the year ending June 1986. Sales increased a more 123 per cent to £304 million, indicating that Alan Sugar's ability to make lots of money

is, if anything, improving.
The sales figures are accounted for by some
350,000 PCWs and 650,000
464s and 6128, 57 per cent
of these being overseas.
France turned in growth of
173 per cent, and the company's market penetration in
the rest of Europe also increased substantially. US

sales were a relatively feeble £17 million, representing tens rather than hundreds of thousands of machines. The Amstrad PCW went on

I he Amstrao PC W went on sale in the States in early summer of this year, but has feiled to generate any enthusiasm, like its predecessor 6128, which failed to "revitalise the home/office segment of the lagging personal computer market in the LIS" in

The US's deplorable reluctance to return to the CP/M standard and take up using 3 inch discs has probably influenced Amstrad's decision to launch the new PC1512 at



'It says I've just made £75 million."

the Comdex show in November, although it's not due for release there until the spring and stock shortages may push this date back further.

Sugar claims IIII have sold 100,000 PC1512s already, although they're not due to be shipped until later this month, and was last week suggesting that production wouldn't keep pace with demand until keep pace with demand until

June 1987. Dixons' waiting list only seems to limi backed up into January, but it's still difficult to see how Amstrad can launch im the States.

The company's products so far have, however, been launched too late to catch growing markets in the US, and Amstrad must be conscious that this could also happen to the PC.

Cool welcome for 64c in the high street

COMMODORE'S new 64c is now in the shops, but it has yet to make it into the major multiples and appears to be meeting stiff competition from the old style 64. Commodore maintains that it will be available through the major high street chains, but won't say which ones, or whether

negotiations have been completed.
Dixons, Boots and W H

Smith currently are not stocking the machines. Dixons are to stock the machine shortly, while Boots and Smith are for the present continuing to stock the old 64. Various branches contacted felt that

y which ones, or whether branches contacted felt that

Glamorous 64 finds it tough.

there would be no shortage of the older – and £40–£50 cheaper – machine in the run up to Christmas.

The 64c has made II into the independents, but is being sold alongside the older model, with London dealers Galaset, Hi Voltage and KK Stationers all quoting prices 630—650 lower for the latter.

At the time of the 64c's launch Commodore described the machine as "a worthy successor to the 64." but the machine's high price tag plus the continued availability of the old 64 seem to be damaging its chances of taking over.

Ill does appear that Commodore is currently in negotiation with the chain stores, and hopes still to get the new machines accepted. Time, however, is not on the company's side, as the stores are now on the point of finalising their Christmas plans.

Japan enters brand new trade cycle

THE failure of MSX to make an impact in this country was evidence that the Japanese weren't invincible after IIII. But now, if the Japan Times is to be believed, they're losing their grip completely.

Sanyo has produced an electric tricycle called the Amorton Car', solar-powered and capable of a top speed of 15mph. Sound familiar? Funnily enough it looks just like a certain other British-made trike.

PC 1512 hard disc price DISTRIBUTOR Northamber's

20Mb hardcard for the Amstrad PC (see Popular, 25 September 1986) is to cost £618. A PC fitted with the card will cost as hade more than the PC1512 from Amstrad, but the card is available now, while hard disc versions of the PC are in short supply.

Amstrad in ascendant

- show report

THE lull before the storm? The Ametrad show at London's Nountal last wook was as ever, well attended but with the PCW and its third party support already well-established and the PC vet to arrive in any great numbers there were few new products to gladden the hearts of owners and prospective owners.

That said there were signs that the PC wave is gaining momentum, with numerous software houses showing budget products for the new machines New Star which cut its teeth on hudget CP/M. software led the nack with dRase and Lotus workalikes for £99 and was also showing PC Outline, Brown Bag Software's excellent outline processor, which it is selling in this country.

PC veterans Caxton Software and Software City were in hot nursuit. Caxton with a reduced price range retailored for the 1512 and Software City with Ability (see separate story). Cambrian Software has norted its business and accounting software range across to the PC, while Robtek was extolling the virtues of Pyramid, out for both PC and PCW at £99.95 and

described as an easy to use integrated financial system. Tasman Software probably broke two records at the

At £24.95 Tasword PC is one of the cheanest word processors available for the 1512, and it's almost certainly the first commercial program for the PC to have been first sold on the 7X81.

First prize for covering all the exits went to Timatic. The company's previous efforts include a 51 inch disc drive for the PCW, so there's a certain logic in its latest production -3 inch disc drive for the PC1512. It only needs someone to tell the company that IRM's granted selling 31 inch disc drives for its PC to make matters really confused

The PC wasn't on well provided for on the comms side. although both Modern House and MML Systems were showing products. Modern House's is something of a rave from the grave, as the company has secured stocks of the old 1200/75 Prism 2000 and has revamped the comms software. It is however reliable and cheap, and works with the PC1512

MML's production is Straight Talk, a communications package developed for the 1512 Wincludes a library of services and modems, plus a text processor for the preparation of ASCII files

Back on the PCW Pace, producer of the official Amstrad modem for the PCW was showing 51 inch drives for the machine and promising Commstar PCW shortly. Despite the Amstrad take-

over of the Sinclair name there was little sign of the new Spectrum Plus. HiSoft had one on display, while Kempston had produced # F6.95 interface for the machine's joystick interface (1) making the machine Kempston compatible.

Copy software and hardware (see page six) was in short supply following Amstrad's ban, but Romantic Robot appeared to have got round the problem with its Multiface 2. The device had been reconfigured for the show so that software copied with it is serialised. Copies can therefore only be used if the Multiface that produced them is connected to the machine. A harassed Roboman explained that it had been difficult to do this in time for the show, but that it appeared to satisfy the authorities

Software **Hotlines**

Electric Dreams can hardly he accused of flooding the establishment a year ago.

That, however, is set to change this Christmas, when the Southampton-based company will be hurling ten new titles, mostly over three formats each, at the unsuspecting consumer. From a glimpse of the new

range, we can say that all the

releases are well worth a look with attention paid to graphic detail and game play. A number are based on beautweight licensing deals these are the sort of contracts you can get when you're by mighty Activision

First off the duplicating mechines should in Commodore and Amstrad versions of a 3D maze/find the right obiects/do the right things with them game. Your ultimate task is, as a synthetic human being to rescue a baby from the inner complexes of the mechalabs

Then there's the muchtalked about Aliens 2, from the hit film sequel, Aliens 2 the film is a truly stomachknotting tale of suspense and tension, and Soft Machine. the programming team. In aiming for the same effect here.

You get to control Ripley and the Marines through the control complex infested with sliene Out November on Spectrum, Amstrad and One of the most interesting

of ED's forthcomers is Exolorer, programmed by the RamJam Corporation, which has come up with some pretty innovative stuff tremember Valkyrie 17 and Think(?). Here you've landed on a strange planet and must collect pieces of your spaceship to put it back together and escape. Doesn't sound too innovative so far, buh? Well, the graphics showing the planet landscape as you move through it are gorgeous.

And let's not forget Dandy. licensed from the original arcade game, not Gauntlet the coin-op game developed

from Dandy, which is US Gold's twe think that's all the right way round).

Dendy the computer game (are you still with us?) is also by RamJam, very fast, very colourful, detailed graphics, hordes of nastins

Also in the pipeline are Big Tmuble to Little China tagain from the film), Chameleon (an out and out shoot 'em up linked to the four elements: earth air fire and water - you can shoot the air icon at the fire icon to blow it out, etcl. Star Raiders // (from the coinon). Circus Of Death (adventure/strategy/arcade) and Hiinck (converted to C64 and CPCs from the Spectrum) and Tempest (more coin-

Meanwhile, over on the ST Psygnosia is releasing Deep Space, an Elite-style space shoot-'em-up sporting highly impressive graphics. Your mission is to destroy the aliens and recover objects for the Corporation. The console includes pull-down control panels for your on-board computer and a baffling range of scanners. Well worth # Christina Erskine look



Amstrad ban on copiers at show

banned from last weekend's Amstrad Computer Show at the instigation of Amstrad itself. Organiser Database Exhibitions wrote to all show exhibitors at the end of September saving that "products designed to breach the copyright laws by producing pirate copies of m wide variety of software titles should not be available at our exhibition.

Database defines this sort of product as those allowing a program to be frozen for copying gurposes, disc to disc copiers and tape to tape copiers. Products which can do one or more of these, but not as their prime function. "are

usually quite acceptable. It seems the relatively drastic action was taken in response to a threat from Amstrad to pull out of the show. 'We were getting a lot of

who write software under licence for us." says Mike Mordecai, software sales manager for Amstrad "We could not be seen to be supporting companies who sell products that back open

other people's programs. Database has the right to refer to the show as the Official Amstrad Computer User Show, and the message seems to have been that if the ban wasn't initiated it would become decidedly unofficial. with the presence of Amstrad itself in doubt.

Mordenai doesn's accent that there is any legitimate use for copying devices and programs. "Personally I feel these sort of devices shouldn't be allowed on the market." he says, and points out that only a very small nercentage of sales of say.

the 6128 represent users upgrading from the 464

One of the companies affected has, however, reacted strongly to the ban. Gerry Bassingthwaighte of Mirage Microcomputers says he talked to Database about the matter after the previous Amstrad show in June, and was told there would by no difficulty. He denies that his proing out that it needs to be present when the copied program is loaded back, and therefore, acts as a sort of dongle, and says he is cur-

bility of suing Database. They decided in June, but only told us about it at the end of September. No-one from Database will tell people why we're not there, and what we want to try and tell people is we're not out of business."

Sidecar to launch at £600 in UK

COMMODORE is as predicted to launch Sidecar, its PC emulator for the Amiga, in the UK in the post few weeks. The device, which allows the Amiga to run IBM software, is to cost around £600 on its own but is liable to work out cheaper if bought bundled with an Amiga

The company, however, strongly denies suggestions that Sidecar's appearance here is a consequence of its failure to meet US electrical standards Commodore insists that the device has in fact passed the US approval procedure, and in keen to scotch rumours to the

3D drawing on the CPCs

ARNOR is to release Madel Universe, a 3D drawing system for the Amstrad CPC series, at the beginning of November. The program allows rotation on any axis, full perspective display and features # zoom facility. Drawings can be output to printer, disc or tape. It comes with a free copy of the Gatecrasher strategy game bundled and costs £15.95 for tape and £19.95 for disc

The company is also to release its Protext word processing, mail merge, spelling checker and disc utilities package for the PCW and 6128 in November at

Details from Arnor, 118 Whitehorse Road, Craydon

CRO 2JF. Tel: 01-684 8009. PC in January to try to cut

down on demand, but either AN eagle-eved Popular reader the man's marketing expertise has left him or the suggestion should be taken with

a pinch of salt.

Putting the price up now might shorten the waiting list, but won't a promised rise in three months stimulate demand further as people buy now while stocks last? By January, of course, Sugar will have 100,000 to shift each month to keep pace with production



Running soon - Protext

Proops goes for discounts on software

LONDON discount warehouse Proops Distributors has taken delivery of around 1.000 software titles for a range of machines, including the 64, BBC and Spectrum. Prices and quality are dis-

tinctly variable, but examples include # 64 word processor of Canadian origin reduced to £30 from a list price of £86, and a Spectrum compilation pack down from £14.99 to

Details from Proops Distributors. Heybridge Estate, Castle Road, London NW1 Tel: 01-267 6911.

Rainbird boss leaves company and surname

RAINBIRD Software is to lose its founder and namesake. Tony Rainbird, who has resigned from Telecomsoft. He is to leave next month. and Paula Byrne, currently Rainbird's marketing man-

ager, will take over his position as head of Rainbird. "I don't know what I'll be doing next " said Tony. "But I'll be staying in the micro

software industry Working within Telecomsoft has its constraints, and I'm keen to get out and see if I

can progress - I won't know "I've set up Rainbird much

the way I wanted to, and there are no problems with the team. Everyone is very pleased that Paula has been selected for the post." Rainbird - the software

bouse - will keep its name. which is obviously a Telecomsoft trademark, as well as belonging to its erstwhile

Infocom to shed light on adventures

FOLLOWING the demise of the Adventurers' Club, better news for adventure fans with the announcement that Dave Lebling (MD at Infocom) has become Chairman of that long-standing fanzine, Guiding Light. The 'zine has just gone bi-monthly and is availble at £1 per issue from Roger Garret at 52 Micawber Way. Chelmsford, Essex, CM1

Footnotes

spotted the first Spectrum Plus shipment (six) arriving in an Essex computer store last week. The date was September 30, so the machine was as promised in the stores by the end of September, People who shop in the multiples will. however, have to wait till the end of this week.

Meanwhile. Alan Sugar is suggesting that he could put up the price of the Amstrad



Product News



Sport portable PC

THE PC Sport is a semi-portable PC compatible designed to operate with either monitor or TV. In the latter mode it uses an RF modulator to plug into a TV, and can, therefore, be used at home or is hotel rooms. An LCD screen is also available for it as an onling.

available for it as an option.

The machine weighs 9lbs, runs an 8088 chip at 4-77MHz, and includes RGB.

Integrated

pack for £70

ABILITY, Xanaro Technolo-

gies' highly regarded integrated package for the IBM PC, is

now being sold in this country by Software City at £69.95.

The package includes word

processor, database, spreadsheet, business graphics,

presentation graphics and

composite video, serial, parallel and joystick ports. It has a base memory of 256K expandable to 640K, and has a single 5½ inch disc drive built in. Price for the base machine is f444.

is £444.
Details from Applied Microsystems Technology, 32/34 Cricklewood Broadway, London NW2 3ET. Tel: 01-452

structure and the ability to move files from module to module.

Details from Software City, 382 Kings Road, London SW3 5UZ. Tel: 01-352 9220/6181.

Micro training by mail order

supplier Microwise UK is now offering correspondence

courses in computing. The courses are aimed at both children and adults, and are currently available for Amstrad CPC, Spectrum, Atari 800XL, BBC B and Commodere 64 computers. Subjects available include introductory and advanced programming, assembly language, graphics and applications.

Details from Microwise UK, Freepost 468, Colchester CO3 4BR, Tel: 0206 575718.

Pace set for PCW

PACE is launching a range of 5½ inch disc drives for the Amstrad CPC and PCW machines. Both versions give a CP/M formatted capacity of 800K, and the CPC have the advantage of being able to read and write discs under both CP/M and Amsdos.

Both versions are also supplied with file transfer routines that allow MSDOS discs to be read by the Amstrad.

Details from Pace Micro Technology, Juniper View, Allerton Road, Bradford BD15 7AG. Tel: 0274 488211.

Low cost 64 disc drive

COMMODORE users who're having trouble getting hold of the 1541c disc drive now have another option — the Chinon Enhancer 2000. This drive is faster and more reliable than the 1541c, and at a total price of £148.75 it's

Details from Firstline Software, 206 Great North Road, Eston Socon, St Neots, Cambs PE19 3EF (0480 213969)

also cheaper.



communications software, all with a common command Diary Dates

OCTOBER 25 October

20th ZX Microfair Central Hall, Westminster, London

Details: Sinclair machines, hardware and software support. Price: £1.50 adult, £1 children for advence sales, £2 and £1 m the door. Organiser: Mike Johnston, 61-801 9172.

27 October
Computer Club 86
Blue Cost Comprehensive School,
Birmingham Raad, Walsall
Details: Mainly Amstrad but includes
a Sitclair comer

Price: 25p Organiser: West Midlands Amstrad Users Group, 021-420 1915

30–31 October Hampshire Computer Fair Guldhall, Southampton Details: Business computers. Price: Free entry by business

Price: Free entry by business registration. Organiser: Testwood Exhibitions, 0703 31557.

NOVEMBER
7-9 November
Electron and BBC Micro User
Show
New Horticultural Half. Servicest

Street, London SWI
Details: Hardware, software and
peripherals for the Electron, BBC micro
and Master series.
Priceas: E3 adults, E2 children, £1
discount for advance booking.
Organiser: Database Exhibitions,
061–456 889.

8 November UKEUG National Einstein Show

National Motor Dycle Museum, Birmingham Details: Einstein software and hardware: Price: Free. Organiser: UKEUG, 07982 2399 Wight Computing Fair Right Town Hall, Ryde, IoW Details: Local show covering wide range of subjects Price: N/A. Organiser: Wight Computing Users Group. 10 John Street, Ryde, Isle of

29 November

Wight P033 2PY.

Prices, dates and venues of shews can sary, and you are therefore strongly shirted to check with the show organiser before attanding. Papular Computing Wealty cannot accept responsibility for any alterations to show arrangements made by the organiser.

5 FUN FILLED GAMES







Virgin Games presents the third fantastic compilation in the **BOOM GAMES** series ... 5 bast selling full price games on one tope for the price of one full price new one!

NIGHT FALDS DI AVE THE ONL

Mind Gomes

he Royal St George's course in

Vigin Come

ato a land where will must be defended and the power of good resto

Domoit ye the Coptain of Centurion II in this exciting shoot-em-up. Your ship had a read

shields and a tracking system, but you must decide the best star the affacking Myon craft.

This is a multi solvented creade adventure bothering escallent contain graphists and loss of

VIEW TO A KILL

cocular 3 part multi-screen arcade adventure based on the James fond tilln. There's a cor chose arount the fulfal Tower, a rescue from a floming City hill and some

ack out for NOW GAMES and NOW GAMES 2, still the little value are

NOW GAMES 2 is available from all good software stores or, if you have all ticulty, directly from Virgin Games.

NOW GAMES 3 is evaluable from all gods software stores or, if you have districting, directly from virgin Games

Name make your change or cost of order dayable to Virgin Games Ltd. Please do not post cost.

NOW GAMES 2 is C8.95 (Features Air Wolf, Chuckie Egg, Tir No Rog, Csuldivan, World Cup II)



Vision Commented 2rd Visions Yard Brotohalls Serve London VIII 2DA

Ahead in the 80s

counts of years ann my A couple of years ago, wife and I decided we really ought to drag ourselves into the 80s, and we eventually ended up with a Commodore 64, disc drive and SG10C printer. We soon found that pure computing or computer games bored us. and now we both use the equipment for word-processing (Wordcraft 40), and I take my chief pleasure otherwise in graphics, including text.

Most of my programs are now getting a little old. I would very much like to try some newer programs, but all the shops and mail-order outlets seem to be preoccupied

with games Is there a shop - preferably in the West End of London, or indeed anywhere else - that specialises in non-games. How do I find out, other than by spending a fortune on every computer mag on the market, just what is available. and where I can buy it, preferably after at least examining the manual, and better still

having a hands-on trial? Brian R Caulowell Milton Keynes

We can't think of any shop which actually specialises in non-games in the West End, but Pilot Software City, in Rathbone Place, London W1. does stock a wide variety of products

You've probably tried your local software retallers, but we understand that Softly, in the Milton Keynes main shopping centre, and Rams Computer Centre in Bletchley, are by no means solely games

orientated Do keep an eye out for advertisements for utilities in magazines: and also nearly all software companies will sell their programs direct to customers, if you write to them asking for more detaile

A label of thanks

Recently I decided to sort tridges. In doing so, I used up all my spare labels. I immediately rang Transform, which supplies Microdrive storage boxes. It referred me to its factory, which agreed to send

me some labels. The next day, I received 30 labels in the post. I would like to thank them, as the company does not sell labels normally, and for the fast service. Simon Walker

Redditch Trying to find a better way

In the Star Letter in the issue dated September 25. Alex Aird came up with a novel method of solving the problem I sent to Peak and Poke (Popular, September 4) As yet I have been unable to try this solution as I am in the process of moving but if

my memory serves me correctly even this will not work. This is because bytes 66 and 67 of the header of an Amsdos disc file hold a file

Take the high road to Glasgow

When are we going to see staggering £36 million into its er show hosted in Scotland?

Letter

panies tend to operate from purposes bases south of the border. I noving tendency on their part of any place north of Manchester.

I realise that the population is more concentrated further south and that it may not be viable for one manufacturer alone to display its durables An exhibtion, however, combining proportional representation of all major companies would be an unmitigated success, the magnetism of which would attract and appeal to a wide range of users with var-

I am convinced that an exhibition of this type would generate considerable interest ganisers, and from the end and enthusiasm among the users themselves, without

Scottish user base. It's not as though Scotland he no market has no suitable venues. The city of Glasgow has poured a

showpiece, the Scottish Exhibition & Conference Centre As most computer com- (SECC), just for such

The potential of the SECC can't help but notice an an- has already been realised by several areas of industry, not to refute acknowledgement least the business computer sectors, whose Scottish Computer Show attracted an estimated 10,000 visitors over a three day period.

Part of the blame for the recent slump in the microcomputer industry must. I feel, be levelled at the companies themselves. If they fail to exhibit their products effectively, how can they expect to sell them?

I hope this letter will be instrumental in gaining some positive response not only from the industry in general, but also from exhibition orwhose support there would

> Stuart Low Alloa

checksum. If Alex's method is used the checksum will be incorrect for the file contents and an error will occur when the file is read. My solution to the problem is to use the information stored in the directory entry for the file, coincidentally explained in Peek and Poke, Sept 25, to determine where on the disc the

program is stored. Then, using the disc Rom

routine to read sectors from the disc, move the file contents in Ram. Finally, save the file as normal, using:

SAVE "TEST BIN", b. stert eddr. Note that the default load address may now be incorrect for the file contents. As Alex said if anyone knows a better

way I would like to know SHoot Stafford

Puzzle

recently acquired some coloured plastic numerals of the sort that you might use to display your street number on your front door. In the numerals that I had, each of the different digits was made in a different coloured plastic, though every similar digit was in the same

By taking a number of digits in red, green, blue, and yellow plastic I was able to form the following multiplication

RGGB × BYRG = Y I have indicated the colour of each numeral

by using the initial letter of the colour. The product so formed consisted of eight numerals, all of them of the colours already mentioned. I do remember that the first number was made of yellow plastic. Can you find out the missing colours and

say which digits they represented?

Solution to Puzzie No. 223 A maximum of ten primes can be found

provided that the cards bear the numbers 27, 41 and 77. From these the following primes can be obtained: 2741, 2777, 4177, 7741, 7727, 4127, 274177, 277741, 417727 and

THE SECRET THEM SHISTED SINCE OF SERVICE OF SERVICE OF SERVICE OF SHIST SHISTED SHISTED SINCE OF SERVICE OF SE

Winner of Puzzle No. 223 The winner this week is John R Paton of Paisley, Liverpool who will be receiving £10. Rules

The closing date for Puzzle 228 is October 27

Trying to find a printer

read with interest Brian Hanna's Intert (Popular). September 18), concerning where to buy a disc drive and a small printer for the Oric Atmos. He may like to know that WE Software, the UK agents for Euroka Informaticular and Oric Products International has on sale the Oric Euroka 3 inch disc drive with the powerful Section 205 5. This is a special offer which ends on October 1239.65. This is a special offer which ends on October 1250.

As for a small printer, WE offers the Brother HR5 Centronics printer for £126.50. He may also like to know that WE has word processors on sale - The Author at £14.50, and Driester on 3 inch disc for £12.95.

To any other Oric owners who read Popular Computing Weekly, I would like to mention my bi-monthly 16 page newsletter, which I run, called Your Oric.

Anyone interested in the newsletter can contact me, with SAEs

> K Thompson 41 Morden Gerdens Mitchem Surrey CR4 4DH

Trying to find a colleague

As a senous BBC. Micro
owner I've mastered
both Basic and machine code. I
nachine virtually inside out.
But despite this I've never
actually completed any
worthwhile programming
project, the sort of thing that
gets published in your magazeno or by a software house.
If ind one of the main problemen is getting enough month.

vation together to keep at it for the three months or so necessary to produce a number one hit. Anyway, to come to the point, this has given me an

point, this has given me an idea for a new user group for the Beeb and I'd be most grateful if you'd publish my address so that potential members can contact me.

I hope to get together a

I hope to get together a group of programmers to combine expertise and perhaps work on joint programming projects, sharing the work-load involved. If your readers are at all interested then I ask them to write to me for more details.

Paul Phillips 13 Mountain Road Conwy Gwyned

Quilled again

As another Quill user, I echo the sentiments of Fergus McNeill in Papular, September 17. The limitations of GAC means that an adventure written on the utility is instantly recognisable leven more so due to the amazing lack of an option to use an alternative sett, whilst Quilled adventures will hold a certain amount of

With the advent of further modules to enhance The Quili system, I for one know which method of adventure writing i'll be using. But let us remember that it is up to the imagnation of the author to create a good adventure, no matter how sophisticated the utility!

Blackpool

Lacro Day

NONLO

Many thanks for the letter from Andrew Bowman of the improbable address, Drymen in Glasgow. He wrote

150 PRINT #3:CHR 27:CHR 30: 100 PRINT #3:CHR 27:CHR 30: 100 PRINT #3:CHR 27:CHR 30: 100 PRINT #4 100 CLOSE #3: TOP 100: PRINT #4 100:CHR 40: TOP 100:CHR 40: TOP 100:CHR 40:CHR 40:CHR

S MON PSINTING."

1815 RETURN
D 1806 PRINT 84: "PROMISSION NO. THE
MON PRINTING."

1825 RETURN
LESS PRINT 84: "PROMISSION NO. THE
EX MON PRINTING."

in your September 18 issue on manipulating printer line spacing from software to produce NQNLQ (Not Quite NLQ)

as a useful intermediate print.
My machinery is the
Brother M 1009 printer working with Spectrum or Qt. The
M 1009 control codes are Epson type. I think that the attached routine I think proves
Andraw's contention that his
perine can work with a useful.

sour yppe. I trank, it file all tacked routine. I shall possess to account the property of the

Changing the last value in ine 110 from Cht\$ 2 to Cht\$ 7 will reduce the shift to one unit giving a double strike character with no more sign of the join than in Ernle Wise's hair-piece.

The M1009 has its own command (Chr\$ 27:Chr\$ 71:) for double strike printing which will usually suffice but the DIY approach offers flexibility. For instance, there is a useful enlarged-combined-with-condensed print mode which gives eight characters to the inch with a nice increase of emphasis.

The M 1009 does not allow double strike with this combination. This adaption of Andrew's recipe enables the added double strike and gives a very definite and not too spread out print very suitable for notice boards or emphatic sub-heading variety.

To produce this particular face, insert the following line:-

125 PRINT#3; CHR\$ 15; CHR\$ 27; CHR\$ 87; CHR\$ 1;

I would agree that following Andrew's idea should prove useful a filling gaps in the print controls provided ready made by the makers.

G.C. Wetson

Racing along

am moved by your review of Digital Integration's TT Recer (Popular, September

Craydon

18) to do something which I normally avoid, namely to write and complain.

Well, to be fair, I don't really mean to complain but rather to point out an error or at least a lack of care in John Conk's review

Cook's review. He suggests that the program is far from realistic, because he was able to go round the track list out and not crash. If Mr Cook had changed the difficulty setting of the game from 'club' to, say, 'grand prix', he would have been able to raport that he be proved the proper that he will be the proper that the stightness contact with the kind of tack of case is many contact with the contact of the proper that the stightness contact with the feet of tack of case is many contact with the contact with the stightness of the proper than the contact with the contact with

I cannot say how realistic the game really is — although! I ride a motorcycle! have never taken a 500cc Suzuki around a race track. The game does of course suffer from the lack of control inherent with a joy-stick, but I find III very playable and well-detailed.

and well-detailed. Try parking close to a corner on one of the more twisty tracks and watching the other nders come to grief, or woit just before the fourth from lest bend at Jarama and see the others passing on the adjacent start streight. The computer controlled inders are realistic, stopping at the pits and crashing at the bad

The big advantage over Full Throttle (the earlier Spectrum race garmel is that the opposing bixes will always (well, nearly divays) avoid you i found in Full Throttle that while I could manage the corners, it was almost impossible with B joystick to make the fine adjustments needed when oversking other riders.

A few tips for TT Racers: use the road instruments because judging your speed is almost impossible. Practice getting the right speed into corners: if you are too fast or too slow you will weave about but with the correct speed the bids will go over speed the bids will go over bend. Try following the others to see how they do it. Sorry if this letter has run on a bid – there are not many computer games that lifes, so

your review ally, in TT Racer, on III stretcher). materials TT MBeel Sussex

I get a bit carried away (usu-

- Games: Adventure Corner



Budgeting for success

Tony Bridge looks at a number of recent budget and near-hudget adventure releases

let's talk budget this week

I find the word 'budget' rather misleading nowadays when applied III adventure - most £2 and £3 names are equally as good as most of the £9 ones, though of course, there are exceptions to be made in the case of Level 9's and the more expensive Pawa and the Informm catalogue (some versions of which are a mere £10 and neat way with puns. superh hargains not to be

One of the first houses to produce budget adventures was Eighth Day Its Quill'd games, half a dozen or so of which were released a couple of years ago at just 99p (though I see that infla-£2.50), were all full of humour and tough puzzles and a certain amount of atmosphere, though the packaging was understandably Austere

Since then they have been lying low, but they are now back with # vengeance and HRH, "the game for all the (Royal) family". Although you may at first think that this everyday story concerns a rather higher social stratum

than yours, don't be misled! The story starts as your weekly Giro cheque falls on to the mat - Great! Except that, oh dear, someone's booked and you seem to have received not your own modest few guid, but a more lion! Well, you're an honest person (and you can't quite

manage to feed the corgis and horses subject you must of course return the cheque to its rightful owner at Buck

The ensuing story concerns your ad-The whole point of this little romp is to poke fun out of the Royal family, and this to a completely devastating fashion. There is a lot of atmosphere in the locations, which take the player round and round the West End of London, and ers, are well-drawn and almost seem to live, which is quite a feat in a Quill'd

Patch'd and Illustrated with rather abstract pictures, the game is well prethroughout, leaning heavily for inspiration on Spitting Images and displaying a

THE PAWN CRM 64/128

> if you've seen and enjoyed that series you'll probably find that the authors' sense of humour, relying as it does on Randy Andy, Phil the Greek, Corgis and large pink plastic ears, may well coincide

However, there are problems: first, with the problems themselves, which are rather convoluted, with solutions which are not immediately obvious. For example, near the start, you must get drunk in order to get the pink elephant with which to bribe Prince William. To do

this you must visit a phone hox three times and then convey, each time, . message to Prince Andrew at the Booksoff night club. These messages are to do with the results of certain "tests" which are of great interest to the Prince, who

shows his gratitude by bribing you with Last, the price - 1 know that I started

> disappointed to see that Eighth Day have moved into the realms of £6.95 software, and HRH is, quite frankly not worth in At £3 or F4 I would have no hesitation = recommending it, but at this price, I have to say that you should invest only if you, like the authors, really want to take part in mocking

Eighth Day, 18 Flaxhill, Mornton Wirral I 46 711H

And now to more Quill'd stories. These two are from David Edgar of Scotland. The Dregon of Notecore and Treavery neatly re-designed character set - but each is let down by appalling spelling (both title pages, for instance, displaying mistakes and silly ones at that, which should surely have been picked up by more than casual play-testing).

Both titles give a fair indication of the games themselves (Kill the former and Get the latter), and really offer nothing that hasn't been seen in thousands of other

adventures, which at least have the distinction of being first. As usual, examiming and searching every object and location pays dividends; there are some neat little nuzzles of course (otherwise. why would anyone bother writing an adventure?) but all in all, I can't help thinking that, with good budget software around like Seabase Delta and so on. scenarios and plots like these should be offered as a no-frills database at a realistic 50p or £1. David lives at 1 High Parksail, Erskine, Scotland PA8 7HY.

Adventure Helpline

2272 (Mastertronic) on C64. What do I do once I reach the nit? The orchestra is waiting and I don't know what to de Michael Kukielka 43 Clarendon Road West, Chorlton Cum Hardy, Manchester M21 2RN

Bored of the Rings on Spectrum. Any information concerning the third part would be most welcome. Simon Amps. 22 Albert Road, Tonbridge, Kent TN4 2SR

Red Moon on C64. How do I get past chasm? Also I can't get out of the first location of Robin of Sherwood, Helpi-Stefan McGowan 47 Hallnarth Circle Kendal, Cumbria LA9 5NU.

Mordon's Quest on Atari 800XL. Where do I fill the aqualung and how do I onen the harrier? Barbara Armitage 46 Cinque Ports Avenue Hythe Kent CT21

Heroes of Karn on Amstred CPC 464. Any tips and maps! Kirsty Nichol. West Green, Marwick, Pirsay, Orkney KW17 2NB.

The Baggit on C64. How do you get out of the first room? (I'm new to adventures.1 C Swift, 55 Valley View, Baildon, Bradford, West Yorkshire BD17 5QT

Adventure Helpline

Going bananas? If you are stuck in an despair - help is at hand.

Fill in the coupon, explaining your prob-

lem, send it to us, and a fellow adventurer

Remember - the system only works if those adventurers who have solved the

nn (Micro).

Golden Baton on Atari 800XL What's the magic word to get the lump of quartz. Peter Taylor, 13 Mackenzie Crescent Burneross Chaneltown or Sheffield S30 4UR

Seabase Delta on Amstrad CPC 464, I cannot get the bowl and foil out of the refuse compartment, and I'm not sure of the use of the chute. I can't find the egg and I don't know what to do with the hen. I have completed and can offer help or solutions on Jewels of Babylon, Hernes of Karn, Message from Andromeda and Red Moon (plus limited help with Seabase Delta) Christopher Eng. 14 Amner Boad London SW11 6AA

Planetfall on Atari, I have escaped the work the lift Richard Gibbs. 34 Garden Way, Bootle, Merseyside L20 5LN

The Mural on Spectrum. Any help appreciated. Alan Hughes, 22 Tyddynto.

Hero of the Golden Talismen on C64. How do you use the Scroll spell. is the flag for? Paul Crutchley, 25 Underhill Road, Upper Beeding, Steyning, Sussex BN4 3JG

The Hobbit on Spectrum, How do I get Bard to follow me and kill the dragon Smaug? Hayden Price, 96 Manor Road,

Velnor's Lair on Bric 1, How do I get past Velnor (wearing washed calrog skin? D Gomer, 88 Danyoraig Estate, Graig, Pontypridd, Mid-Glamorgan CF37

"THE ADVENTURERS HANDBOOK"

The monthly book no self-confessed adventurer should be without "Stunning value" - Tony Bridge, PCW, issue 12 available now!

44 pages of adventure help and news for just £1

FOR EVEN BETTER VALUE TAKE ADVANTAGE OF OUR SUBSCRIPTION RATES

3 issues for £2.75

Issues 1 to 11 are still available and cover hints. maps and solutions to over 200 adventures (issues 1-6 for £5, issues 7, 8, 9 10, and 11, £1 each).

ARCADE PLAYERS

If you enjoy arcade games why not take I look at our other handbooks - £1 each - back copies and subscriptions as Spectrum Arcade Handbook - issue 12

Commodore Arcade Handbook - issue 11 Amstrad Handbook (including adventures) - issue 11 BBC Handbook (including adventures) - issue 11 C16/Plus 4 Handbook (including adventures) - issue 5 Send cheque or PO to:

> **H&D SERVICES (PCW)** 1338 Ashton Old Road **Higher Openshaw** Manchester M11 1JG Tel: 061-370 5666



GLOSOFT WHAT THE PRESS SAID

##This is one of the most original games to emerge this year thigh quality gameplay makes this fully desorve a MEGA Great value! Buy II now! ## C.C.I. Sept. 186 ##The action can be fast and funous or cool and calculated, the choice is yours! Droids is a highly playable game with plenty of mental challenge as we'll as arcade action ##.

COMMODORE USER SEPT 86

##Drods is a ricely produced areade adventure with elements of Newson's Produced and Epyx's Proposable Mission. The display are big and colourful and the programming as plassmit fast and smooth Good fast ## POPULAR COMPUTING WEEKLY Sept. 25: 86

AVAILABLE NOW FROM YOUR LOCAL DEALER OR SEND CHEQUE!/P.O TO ANGLOSOFT. P.O. BOX 60, COVENTRY PRICES INCLUDE PAP!

£7.95 Cassette £9.95 Dick

A program for programmers

couple of weeks ago the perceptive John Cook posed the question: 'What, apart from six guid, is the difference between a budget game and a full-priced game?" in the Ziggurat

Seasion, the first offering from new publisher Thalamus, provides the perfect

And the answer is hype or presentation, if you prefer. Il probably took an hour or

two to write the code, and six wasks to do the graphics. At first glance, Sanxion looks # clear winner. The graphics are very pretty, the action is smooth and fast Okay, so the sound effects

aren't brilliant but you can't have everything, can you? Well the problem with Sanxion is that you can't have anything - except very pretty graphics it's a program written for

other programmers. "Coo," they gasp, "sprites in the bor-"Gosh look at that solit speed scrolls on the fore-Unfortunately, it's boring,

It's almost like Scramble remember that? - with your ship moving from left # right. and the aliens throwing things at you from right to left.

Occasionally, just to keep thing from behind you as well. As you progress, the things change shape, sometimes they change speed, often they change their flight pattern. But always it's shoot em if you can, dodge 'em if

you can't Now there's nothing inher-



ently wrong with this But we're back to that question what's the difference between a budget game and this one? Simply at £1.99 or ly good value. At £10 80 but five pence. I wouldn't give it house room.

Recommended for desperate shoot 'em up junkies only On second thoughts, make that "rich desperate shoot em up junkies Popular Appeal 4 4

Peter Worlock

Program Senzion Micro Commodore 64 Price £9.95 cassette £14.95 disc Supplier Thalamus. 1st Floor Advance Works, 44 Wallace Road,

with your inheritance

Infogrames is making quite an impression with its early batch of releases. Following the unusual and impressive L'affaire Vera Cruz comes the equally unusual The Inheritance

What sets Inheritance apart from the usual run of graphic adventures in that the graphics are crucial. In this game you actually pick them and

The scenario is a touch reminiscent of Torremolinos

Having made your choice, you head for the street. And this in where things get really tricky. Immediately you set foot outside your room, your neighbours will be clamouring for the return of all their stuff the past months

You can ignore them, but can threaten them with the

gun, knife or axe - but that might get you arrested. You see, you only have 20



"The graphics are well-drawn and colourful, but there's little animation

you've been left a bundle of minutes to get that plane. So. money but to claim it you have to get to the airport. make your flight to Las Vegas, and then win a fortune at the gaming tables

You begin in your squalid little apartment and your first problem is what to take. Wallet, certainly. Gun? Might be wise in a town like Vegas. But what about that cactus plant? Or the cat?

you go back to your room and get a new batch of junk and face your creditors once

Once you get to the airport you're still not in the clear. There are numerous hazards

to be overcome there as well. The game is completely under joystick or cursor control. You pick up and drop

Ditto for opening doors, cupboards, drawers and so

The graphics are well drawn and colourful, but there's little animation and the change from scene to scene can be jerky.

The major problem, however, in playability. I found the opening apartment block sequence frustratingly difficult. Eventually I decided that being rich wasn't worth the hassle and sloped off back to my room and stayed there.

The Inheritance might be

worth investigating if you're an adventure freak, or just m games buff looking for a change from the usual

But I'd strongly recom-

Popular Appeal 4 4 4

Peter Worlock

Program The Inheritance Micro Amstrad CPC Price £9.95 tape, £14.95 disc Supplier Infogrames. Mitre House, Abbey Road, Enfield, Middlesex EN1

A satisfying heap of bones

everyone's surprise. the Beeb has recently played host to half-adozen fine arcade games. Latest, and possibly best, is Stryker's Run, which comhines lots of disparate ideas -Moon Buggy, Who Dares Wins Defender - into a har-

moninus whole design, which is excellent: the objects appearing on the horizontally-scrolling screen are all nicely drawn, although you will see a certain degree of flickering.

Your animated hero. Commander Stryker, has to get the secret plans through the enemy lines to headquarters. using his laser pistol, grenades, and friendly soldiers. Against him in ranged the might of the White Army. consisting of soldiers, heliconters, minefields, and lets. Stryker can jump over

mines, duck under enemy shots, and run to avoid hombs from aircraft Although getting hit loses you one of your nine lives this isn't obvious unless you keep an eye on the Tives remaining counter: while enemy soldiers, when hit, collapse m a satisfying heap of bones.

Aircraft can be occupied and flown, although I always got shot down instantly. All very good fun, added to

which, shock horror innovation there's also a Master



128 version of the game on the disc, including an extra Another goodle from the increasingly excellent Supe-

rior Software Popular Appeal 6 6 6 6 Chris Jenkins Program Struker's Run Micro BBC B/+/128 Price f11 95 disc Sunpiller Superior Software, Lane, Leeds LS7 1AX.

Bombs through the window

lent Alerti Mad dog commie degenerate saboteurs have planttional Research Institute and reprogrammed robot guards

to defend against intruders. What can we do? Call in the droids, that's what. Your team of droids must roam from room to room searching for the bombs and then lob them out of a window.

it's not as easy as it sounds because many of the rooms are only connected by a portal, well out of droid reach

throw the bomb from one droid to another through the portal and head for the exit before someone gets turned into droid paste. The first of the five buildings has rooms and floors arranged on a four by four basis. To further confuse matters there is a half functioning computer is each building which has had its circuit boards scattered far and wide. Collecting and reinserting said boards repairs various functions around the building, like transporters

The answer to that is to The varying gravities and orientations add difficulty to the arcade element. Controlling a droid while trying to get rid of a bomb when gravity is reversed can put you in a The graphics, represented on a screen showing two

rooms at a time, are in high resolution and two colours only, which makes them look Deactivators is not really an

arcade game with strategy elements, it's a graphical strategy game. A lot of thinking will be needed to complete the five buildings.

Well. I have to say that I found this game lacking in graphics, music (a sub-Hubbard tune) and price (too much by half). It may be your cup of tea but Deactivators failed to activate me at Popular Appeal + +

Duncan Evans

Drunk on Zythum

he point of Zythum is to find some Zythum and drink it. And why not. you may ask yourself?

This drink then, is a magical brew and resides in the depths of a castle which can be found by passing through four different and dangerous lands, Dangerous? Well. that's because of the appelling state of the highway in this part of mysticland.

Zythum reminded me of a graphically weak Hunchback with the need for accurate jumps over the bogs

You've also got the guardiens to contend with. These quardian chappies looked like oversized wasps to me but one sting, and you're dead. Zythum is irritatingly (im-

possibly) difficult Popular Appeal &

Duncan Evans

Program Desctivators Micro C64 Price £9.95 (cassette), £14.95 (disc) Supplier Ariolasoft, 68 Long Acre, Covent Garden, London WC2E SJH.

Program Zythum Micro Spectrum Price £7.95 Supplier Mirrorsoft, Mexwell House, 74 Worship Street, London EC2A 2EN.



antiquing with Christopher Hester's tips for Mercenary - The Second City; the rest of the hints are more specific than those given so far.

When you find an object of worth, such as the energy crystal, you are asked to deposit it in certain rooms for a reward. There's always a Mechanoid room and a Palvar room to choose from. Don't drop the object until you have saved the game because the reward you may get varies enormously. For example the large box fetches # hefty 202600 credits in the Mechanoid stores, but only 25 credits in the Palvar stores

To get the antenna you'll need to use one of the 'trigger rooms' which change the layout of the complexes. At the colony craft leave your ship in the hangar then proceed to the empty blue room to the north. This is a trigger room but the game won't show any changes until you go back to the hangar - III looks as if your ship has been stolen! Also you can't use

the elevator

However, you will find that there are a couple of new rooms south of the second dark room replacing the deadly skull and crossbones, (If when returning to the hangar, you see your ship again, then the layout has returned to normal More than one room acts as a reverse trigger for this layout so you may have to go back to the blue room.)

Then you can go into the lift room, through the six sided door, and instead of finding the top level there's a single room with the antenna in it

If you use the transporter room north of hangar **.08 (in a brown room), then you'll find yourself in the green hangar at 3.08 but you've triggered the alternative lavouti

Go through the door that normally leads to a dark room and you'll find instead an orange blank room with a very important key for you. If, however, you've got the pass, this room also lies at the end of the maze at 08.**

'Make sure you save the game position regularly as there are many traps. One room features eight doors along the

wall and seven of them lead to prison! In the orange blank rooms move in a definite line north, east, west or south until you hit a wall. Drop an object. Then do the same for all of the walls. You can then see the size of the room from the positioning of each object, which is very useful. You can also find the door out more easily

Reversing through The Second City

Tony Kendle completes the tips for Mercenary - The Second City

"To get through the maze west of hangar 13.08 enter the door then on in the following directions only - south, south, east, north, south, east, north, west. If you get stuck, drop objects to make sure you are in a different room.

'A word of warning - one of the transporter rooms will reverse all the city - east doors move to the west, etc. but north and south stay as they arel It's very confusing and makes mapping very difficult. It may be that the effect itself can be reversed but as yet I don't know how. The transporter is easily recognised because III turns orange for a second time

when you enter it. To complete the game either make cation room to hire # ship (assuming it's working) you need the antenna or steal the ship from hangar 8.** and use the Novadrive to power it.

"If anyone can reveal the use of the coffin, the altered kitchen sink or any other tricks then you've beaten me

'Now here's an unbelievable chest for users of the Final Cartridge from H&P Computers. I have one ill these permacently plugged in and it's really boosted my C64. Although the following tips are amazingly useful I only used it later on in the game for making an accurate map.

Load the name as normal then press Restore to freeze it. Whenever you are in a dark room and do not own the photon emitter simply press F7 for screendumn from the Final Cartridge freeze menu. Then F1 and F3 can be used to change the screen colours. Ill III dark room you are really looking at black lines drawn over black walls. By changing the colours you can make the lines any colour you wish so they show up. You can use this to check the doors, your position and it is extremely useful at 3.04 to check the shape of the doors. Any objects present will also be seen - try the hanger at

14 15 to see the shin You are also able to see the walls in the orange blank rooms, which would be

"A warning though! Only use this cheat when you're not playing to get anywhere as the freeze menu corrupts the city above it. Look in the dark rooms then reload the game and play it.

"Also when you hit F7 to see the screen make sure you get the top two

Elita

Firebird

Firebird

Domark

Firebird

Virgin

Hewson

Cascade

Americana

Epvx/US Gold

Mestertronic

Mastertronic

Mastertronic

Mastertronic

Mastertronic

Quicksilva

9-15 OCTOBER 1986

Firebird

Filto

Software Projects

Gremlin Graphics

Charts

Top Twenty (1) Paperboy

- 2 (-) Druid
- 3 (2) Thrust
- 4 (10) Go for Gold 5
- (9) Trivial Pursuit 6 (4) Super Cycle
- (8) Dragon's Lair (3) Speed King
- (12) Ninia Master 10 (13) Jack the Nipper
- (7) Kane (5) Ninja
- (6) Dan Dare (-) Alleykat
- III (11) ACE 16 (-) Storm
- (-) Finders Keepers
- 18 (18) Glider Rider 19 (15) Warhawk 20 (14) Ghosts and Goblins

thirds as it is a split graphics/text screen When you have finished, pressing Return will get you back in the game, although the colours will resort back.

Well, what can I say, Chris, excent many thanks for | your hard work and I can't wait to see what you come up with for Marcanary II. I'm also looking forward to all the excited correspondence that your letters seem in provoke, with other people filling in a few more pieces of the puzzla.

One person we have already heard from is Don Maclend of Dingwall who has a different point of view about The Second City. "The game is exactly like Mercenary, but in different colours, and there aren't any real puzzles aside from awkward map making. I enjoy mapping and found the world system of SC a novelty but by the time you have finished you are bound to have stumbled across the Novadrive.

There may be interesting things behind the triangular doors but the game can be completed without finding out, so what's the point? I doubt whether many people try to solve puzzles for their own sake, particularly when it is not clear that they are really puzzles at all!

Despite Don's strong opinions he sent in another excellent map which we couldn't use because we already had Chris's more complete version. However, thanks for the effort Don, and anything you can produce on Tay Cati or Psi 5 will be very welcome









NEW PC HARDWARE AND LOW COST

SOFTWARE CATALOGUE JUST PRINTED -PHONE FOR YOUR FREE CORY

HI-VOLTAGE SPECIAL AMSTRAD PC PACKAGES

WORD-PROCESSING nc Wordstar 1512

DESKTOP

ACCOUNTS

PUBLISHING

inc M.A.P. Software and NLQ Dot Matrix

From + VAT

and NLG Dot Matrix From From

+ VAT

Official orders welcomed from PLC's, government and education establishments

Mail Order Hot Line Phone 01-686 6362

The new Amstrad PC range (IBM Compatible)

IN STOCK NOW

Prices from

Hard Disk Models from £699 + VAT

PART EXCHANGE YOUR PCW 8256 OF PCW 8512 FOR THE NEW AMSTRAD PC, PHONE FOR PRICES

YOUTAGE 53-59 High Street, Craydon, Surrey CRO 10D. Tel: 01-681 3022

Einstein – as brilliant as the man?

Duncan Evans casts an analytical eye over Tatung's newest

he original Tatung Einstein can hardly be said to have set the micro world alight so Tatung is trying again with the Einstein 256, an upgraded and higher powered version of the notional 780 machine

Physically, the new machine bears no relation to the old Einstein, with colour and shape changing. And for the better, at that. What you now have is an Amstrad-style package with the computer receiving its power via the 14-inch colour monitor, and a built-in 3-inch disc

drive as before. One gripe to kick off with was the amount of non-flexible lead between computer and monitor; 17 inches is somewhat

restraining. The keyboard has 48 liiphanumeric/graphic keys, eight function keys and 13 control keys arranged in a generally standard manner, eithough the right hand side gives the impression of being squashed in. Thankfully though, the cursor keys are in a cluster on their own. As I fais qualify goes the keyfunction of the control of the control

A reset button, beyond the on/off button on the monitor. If conspicuous by its absence but pressing Alpha Lock. Crt and Graph at the same time produces the desired effect. So long as the software programmers haven't disabled them, of course

On the interface front the new machine has notably fewer sockets and plags than before, seven world. These are the Vamp (Video, news and light) peak adjectoments, monitor/power, sadio out, solds out

Powering up the Einstein 256 reveals that this is a 'clean' machine. The master disc must be inserted and Cnt-Bhead pressed to boot the Tatung version of CPIM. 'Ahel' I hear you say, 'CPIM and 3 inch discist Won't this load PCW programs, then?' The answer to that is, unfortunately, no. Or not yet anyway. Tatung is working on a piece of 50f-th.

ware to enable you to run Amstrad CP/M

"File handling is allocated an acceptable number of commands, one of which, Append, allows you to write additional information

additional information to the end of a sequential file

n dec mass

The new look of Einstein

programs. When it comes up with a fully working program, as opposed to the one shown at the *PCW* show, it should enhance the Einstein's commercial viability by it not inconsiderable degree.

Once you've loaded on the Einstein's

Once you we loaded up the Einstein's Basic, called Ebasic appropriately enough, you will discover that you have only 4 1852 bytes of memory to program in. What about the rest of the 256K lurking beneath the machine's bonnet? Well, 192K is allocated to the video chip and the Rom has 16K of the CPU's 64K. With such a whopping great amount of With such a whopping great amount of

video Ram available you would expect the machine to be capable of some pretty stunning graphics.

Well, on paper, it's capable of producing a 256 by 212 pixels bit-mapped screen in 256 colours or 512 by 212 pixels in 16 colours from 512. Needless to say these modes gobble up the video flam and are not compatible with the old Einstein.

There are a total of 10 different modes fi

which juggle resolution, colours available, active sprites and video Ram used. When used in 80 columns, the monitor gives a reasonable display which is perfectly readable for wordprocessing.

Sound output is provided by a 1 watt rms speaker located at the bottom left of the monitor. This is monophonic but there is also a stereophonic output, a 3-5mm jack which can drive low impedence head-ohones.

The sound generator itself has three music channels and one noise channel in the manner of the BBC B and

Amstrad CPC machines And so to Fhasic, the Finstein's version of Basic Once you've loaded it up you will discover that you have only 41852 bytes of memory to program in. Advocates of structured programming will not be happy with this marginally improved version of the old Einstein Basic as III supports only an If. Then . Else . construct. No procedures. no Repeats-Untils and no While-Wends, Gosub and

The graphic commands available are reasonably comprehensive allowing ellipses (actually they're fixed shape squashed circles), points, lines and polygons with varying numbers of sides to be drawn. These are all outlines of the shapes but there is a Fill command

Goto are present of course.

so solid shapes are easily attainable. Whare the graphics do go beyond the norm is in the provision of hardware norm is in the provision of hardware them. The shapes are defined using grids of eight by eight or 16 by 16 pixels and can be expanded by use of the Mag command. There are 32 grinnse available armany you can have on any particular screen line. In Multi-colour and Graphics one and two modes, only four are permissible while in the other graphic massible while in the other graphic Ensteinly occur have eight.

The sound commands consist of Beep, Music. PSG, Tempo and Voice enabling you to play simple tunes very easily. To get anything more out you have to put correspondingly more in.

File handling is allocated an acceptable number of commands, one of which, Append, allows you to write additional information to the end of a sequential file, thus avoiding the tedium of opening first and reading through till the end.

String handling gets the usual Left\$.

Right\$ and Mid\$ alhough there is no losto\$ style command for searching the contents of strings. One interesting ability is that of assigning an entire screen of text into a string which can be

Ralow: close-ups of the Finstein 256 interfaces

then manipulated, using Scm\$

Documentation is usually something that manufacturers think about last of all (cf Commodore) but the manual which Tatung supplies features all sorts of

interesting and comprehensive facts and details. For the really technical stuff

there's a fair amount of wading to be done to get to the nitty gritty and some things are uncomfortably vague but otherwise it's a very helpful tome.

Well, there you have it. The Tatung Einstein 256 has good graphics potential, reasonable sound and average keyboard-- a neat all in one package.

The only problem is that it's competing in the heart of Amstrad territory with a small business/games machine design. With the release of the Amstrad PC 1512 in exactly the same market the Einstein 256 will littl very hard pressed to compete on the same terms.

If it's less of a games machine and more of a serious machine you're after then there's the well established PCW 8256/8512s. And going the other way the CPC 6128, with the same system components as the Einstein, has a more The Finstein 256 is a good machine

but unless Tatung commissions some outstanding software to make use of the extra memory and graphics potential, and I mean the sort of outstanding that gets people talking about it, then I can't see it competing at this price with the plethora of Amstrad machines

Product Einstein 256 Price £399 Supplier Tatung (UK) Ltd. Stafford Park 10, Telford, Shropshire TF3



The Enterprise range of BABT approved modems offers you V21(300 BAUD), V23(1200/75) and for Enterprise 2. V22 (that's right 1200 BAUD FULL DUPLEX). We can offer them complete with an extensive range

functions, viewdata etc. all at incredibly low prices. in the words of Micronet 800 "As far as value for money is

concerned, Enterprise 1 and 2 from Kirk Automation are it."

PRICES

Enterprise 1 - £99.95 + VAT (£114.95) The Space Age Enterprise 2 - £249.95 + VAT (£287.45)

KIRK'S ENTERPRISE Alternative

£129.95 : VAT (total £149.45)

£149.95 + VAT (total £172.45)

£149.95 - VAT (total £172.45)

£199.95 + VAT (total £229.42

There is an alternative

Electronic Mail

For Telex, on-line games, Prestel, Telecorn Gold, Easylink, home banking, cheap holidays etc.

£199.95 - VAT (total £229.42)

- ▶ Amstrad PCW8256/8512 Amstrad CPC 464/664/6128 IBM - Compatibles (IN PC 1512)
- um (all models) ■ BBCB/Master ► Alan ST(Alluerunns)
- ▶ Atan 400/800/130XL 0 Commodom64/128 Ansmit Br + II

OTHER VERSIONS AVAILABLE POA

All cheques etc. payable to Kirk Automation Limited Bridge Works, St. Whites Road, Cinderford, Glos. GL14 3HB Access, Visa and Amex Telephone: 0594 22084

NOBLES COMPUTER REPAIRS

* Repairs carried out by our own engineer * All repairs carry a 4-MONTH GUARANTEE

For estimates phone or send your computer to NOBLES €16.95 inc parts Spectrum Plus.

post and pack Commodore 64/Vic 20 from £9.95 nlus

from £18.95 plus Also repair specialists for MSX computers

NO HIDDEN CHARGES

* SPECIAL OFFER

5 FREE GAMES WORTH £25

with each Spectrum repair - Trade/School and Club discounts arranged

* For free, no obligation estimates phone or send your computer to NOBLES for the fastest, cheapest repairs in ESSEX

> NOBLES 14~17 Eastern Esplanade Southend-on-Sea

Essex 0702 63377/8 63336/7/8/9

7 days a week, 24-hour Answering Service

ANCIENT & MODERN



FREE SOFTWARE

Is what you get when you buy an Amstrad PCW, but how many people make the most of it? Now, for the first time, this double package from two of Britain's most experienced computer authors takes the lid off the PCW's hidden power:

- WORD PROCESSING: everything you always wanted to know about. templates, layouts, standardised forms, odd-sized formats - from the ABC
- of LocoScript to the sophisticated techniques of the modern office CP/M: sensible working methods for a secure and efficient system
- straightforward Basic programs
- LOGO: graphics and list processing for the first time user

Practical Amstrad Word Processing and The Amstrad Companion - 440 pages of ideas that will turn your PCW into the power house it was meant to price of £10.00 for the two including pap.



Address_

Time for the game machines

Andy Pannell dissects the new Spectrum Plus 2

ne new Spectrum Plus 2 is a nice improvement over the ordinary Spectrum 128 in most ways. The most obvious differences are that it's not black (it's grey) and the keyboard looks

raagonable While the keyboard has exactly the same layout as the Spectrum Plus and 128 machines (except that the Extended key is bigger) it is much nicer to type on. If feels similar to the Amstrad range, for obvious reasons, though feels more gramped, and of course keys such as ; and " are in the 'wrong' place. It's definitely better than any previous Sinclair keyboard and is good in all respects. except that most of the keywords used in 48K Basic are missing. The exceptions are the Run. Load and Code tokens. All the others have gone, including some non-tokens like ! (and ©

The built-in cassette player is to the right of the keyboard, and makes loading for easier, with no leads to dling of level controls. The machine is designed for the games market and to load a 128K game couldn't be easi-

couple of times to get to the Tage Load menu and press Return, and that's it. The white legends on the cassette buttons were wearing thin on the review machine and didn't look as if they'd last very long.

er - press Cursor down a

The machine has all of the sockets of the 128, including the standard Spectrum edge connector, reset switch, RS232/Midl socket. TV and RGB socket, but in addition offers a sound socket

for amplifiers (even though it comes through the TV as well and two D-type joystick sockets. Unfortunately the pinsrandard, following the old Sinclair standard (as used on the Interface 2) rather than the more common Kempston or cursor-key formats. It would seem that compatible Sinclair joysticks will be bundled with the machine from at least some

Inside the case there is a completely new PCB, containing mainly familiar components. The cassette mechanism has a small PCB on it and connects via proper sockets. The quality III the keyboard connectors has also been improved by the designers at Brentwood. at all on the outside of the machine, it can be found at least five times on the inside!

The Rom itself is in two parts - there's the copy E the original 48K Spactrum

programs that run in 48 mode on the 128 will work on the Plus III. The 'new' part of it is slightly changed from the 128 version, because of an extended Amstrad copyright message and the removal of the 'Tana test' routine. Bacause of these changes some programs which access the new 8om directly in the 128 will not work unmodified on the Plus 2. The officially defined entry points have remained though, and games that have no need to call anything else and should

The Spectrum 128 has compatibility problems with quite a few 48K games, and these have not been fixed on the Plus 2. which is a great shame. If would have been an easy job to make the Plus 2 much more 48-compatible by removing some of the redundant code from the new part and replacing it with the code that causes the problems from the modified old Rom. Oh well, it's a bit late now.

In 48K mode most games should work, though older ones do have problems, but programming in 48K Basic is near impossible because all of the tokens have disappeared from the keyboard. Although I was surprised how well I could remember

the positions of the more common tokens, even an old back like me oot stuck on the lesser ones and had to reach for a nearby Spectrum. Anyone who doesn't know the Spectrum keyboard very well can forget programming in 48K mode. and use the screen editor m 128K mode instead It's better in most ways, and you don't need the tokens for it. The only snan it has is that it has a nasty habit of losing key presses just after running a program or a direct command.

All Sinclair add-ons, including the Microdrives work with the Plus 2, although problems if they have Roms, I was hoping to find some code in the Rom for a disc interface, but I was disappointed. It is rumoured that there will be an official Sinclair/Amstrad one at some point though, which would be good. The Spectrum really needs a standard disc interface that all programs can use, instead of the plethora of incompatible ones there are at the moment.

All in all the Plus 2 is a nice version of the Spectrum 128, and will run most games admirably. The built in cassette recorder is very useful, and the keyboard is definitely the best Sinclair production. The CPC464 and the ordinary Spectrum 128 look doomed.



Rom and the extra one containing the screen editor and code to access the new hardware. The 'old' part of it is identical to its counterpart in the 128 excep that the copyright message has been replaced with a very short 10 1982 Amstrad' and the Record massage in the tape routines has been changed. Any



How did you manage without a macro?

desktop accessory program licensed by Robtek from the American company Shanner International Corporation.

The facilities offered are calculator, cards, events, alarms, notes, plan, report

and type The calculator has 20 functions and the ability to print calculations as they are computed. However, most of the functions are fairly standard and provide most things you'd expect from a run-ofthe-mill calculator. It has to be said that the one in Comerman from Microdeal offers a good deal more than Macro Manager does. One original feature in the calculation of monthly payments based on information inputted

Cards and events are essentially the same thing and enable you to define name, telephone number and three other fields of information. The cards can be sorted and printed, searched and replaced. Also, if you have a Haves compatible modern.

there is an auto-dial facility.

The slarm function allows one or more alarms to be set up, with individual messages and repeat options. Assuming you leave your ST on all the time then you can be buzzed with the same messages.

sage every week, month or year.

The noteped allows various messages to BE scrawled down and stored on disc for later recall and possible printing. A maximum of four pages of text can be entered in one

The weekly planner function provides five lines of short text per day for each week defined and can also have important events flagged to the alarm system so that on the relevant day your ST will start bleating until some acknowledgement is received. Also available for use with the weekly planner is the time analysis report which enables you to identify how much time is spent on individual projects each week Then, daily or weekly totals

can be displayed and printed

out for a specified time

The last facility on offer is
Macrotype which effectively
turns your ST into a typewriter. All text entered is
formatted, by centring, justification and tabs, and sent

hcation and tabs, and sent straight to the printer. Surprisingly there are no fillers in *Macro Manager*, all the functions are actually usestarts at a reasonable 70K. If you're interested in this sort of program then this one can be heartily recommended

Duncan Evans

Program Macro Manager Micro Atari ST Price £29.95 Supplier Robtek Limited, Unit 4, Isleworth Business Complex, St Johns Road, Isleworth, Middlesex, TW7 6M



The truly useful executive toy

QL Owners!

file

Gilsoft are pleased to announce the launch of their famous Adventure Writing System The Quill for the QL. Now available in two forms

 You supply the media. (ready formatifed) either two microdrive cartridges, or one 3½/5¼ inch disc, marriad is supplied as a file only.

£10.95

Complete package with printed manual and media supplied in presentation case.

£22.95

From: Gilsoft International Ltd. 2 Park Crescent, Barry, S. Glam. CF6 8HD Tel: (0446) 732765

ACCESS and VISA welcome

AMSTRAD PCW8256/8512

LEISURE PROGRAMS

Four challenging strategy/simulation games from PCW Soft for only £9.95 each or £35.00 for 剛 four.

1. FANTASY QUEST

A role playing game in the best D&D tradition

2 MERCHANT

A 2-6 player trading game set in a fuel starved future.

starved future.

3. MOUNTAIN LEADER

Have you got the organisational ability to reach the top?

4. SPECULATORS

Two to six players race to become millionaires.

Strategy and simulation games have become a traditional application of computers, now you can play them on the PCW's.

PCW Soft, CPC (Minehead) Ltd. 4 The Parade, Minehead, Somerset TA24 5UF Tel: 0643 4851

Soccer

by Mark Slater

art two of three of the listing follows this week as well as further instructions.

After you have selected which players are going in the team pressing 'P' starts the next match. Sunning commentary is given throughout until the final whistle when all the other results in the division are given



updated league table. This sequence continues until the end of the season

when you receive a report of what will happen to your team next season (promotion, relegation etc).

ISONOPHERS ORTHI DIVISION DATA ****

1831PRINTTOR(7.3): "TEAM": TAR(16.3): 1915 ": TAB(20, 3): "Word: TAB(24, 3): "Drw": TAB J3

.3): "Lst": TAB(32,3): "SD": TAB(36,3): "Pts" 1840tab=2

1870PRINTTAR(tab. 3+(equat#21):count

1900IF order(count2,0) = team THEN PROCon

1918PRINTTAB(4, (count2#21#5):team\$ forde es r(count2.0))

1930F0Rcount3=1T06

): data (order (count2.1)).count3)

1958NEXTcount3 1960NEXTcount2

1978FNDPR00

1990REH#### ERAW LINES IN TABLE #### 2000

2010DEFPROCdraw

2020CLS

2030division#="Division "+STR#(division

2040PROCdouble height(division\$, 15,1) 2050GCCL0, 0

2080DRAW1262, Tine 2090NEXT1 ine

2100MOVE18.944:DRAW18.112 2110MOVE110, 944: DRAw: 10, 112

2130MOVETine2,944:DRAWTine2,112

2140NEXT1 ine2

2150ENDPROC 2170REM**** SWIER TEAM CHOICE ****

21900EFPROCchoose_team

2286REPEAT

7230team3=-1

2248REPEAT 2750counter=0

2268REPEAT

2270team@steam941

23909RINITOR(12.counter+41steam3+1s1.fs TOR(16. roumter+4) - leagues(teas(2) - SP((10)

2200 WTI combara 12

2220.VTLteam3=47

2340INPUTTAB(3,18): "ENTER CHOICE": enoug

2350teas=INT(VAL(choice\$)) 23601Ftean(19Rteam) 48THENPRINTTAB(1, 20)

"PENTER A NUMBER FROM 1 MM 48": "ABI16.18):58s.(40):60T02346 2370team=team-1

238/JPRINTTAR(1, 28): "THE TEAM YOU HAVE C

2390PRINTleague#(team) 2488PRINTTAR(12,24):"TS THIS CORRECT"

2420 input \$=GET\$

2430UNTILinput\$="Y" OR input\$="N" 2440UNTTLinout#="Y"

245)hame#=league#(team) 246(11eaque# (teax) = leaque# (36)

24701eague\$ (36) =name\$

25216FEPRYCepace

2530PKINTTAB(7,30): "PRESS "SPACE" TO CO NTIME" ZS408EFEATATLGET ## 1 3

2576REHARRAR : POATE DATA ARREST

05906FFP90Calter

2610F09count5=07011:data(count5.1)=data (courtS.11+1:NEXTpountS.

2620data(teas,5)=cata(teas,5)+(score!=s

2630cata(watch, 5) = cata(watch, 5) + (score2

2220PRINTIARIA 21 - THE CHOICE OF TEAKS 2640IFscore()score2 THEN data(team.61=d

ata (team. 6)+2: cata (team. 2)=data (team. 2)+ 1: date (match, 4) = data (match, 4) +1 26501Fscore2)score1 THEN data(match.6)=1

data (match, 6) +3; data (match, 2) = data (match) .2: *1:data(team.4) *data(team.4) *1 2660TFscore2-score1 THEN data(match.6)=

mate (match, 6)+1: data (tean, 6)=data (tean, 6) +1: data(team, 3) =data(team, 3) +1: data(mat

2688check (1) = team: check (2) = match

2700team1=RMD(12)-1

2728F0R1onp=1T0check: IFcheck (loop) = team r THEN flag2=1

2740 FF flag2=1THEN 2780

2750check (check) = team1; check=check+1 2760team2=RND(12)-1

2780F0R1pop=1T0check: IFcheck (loop) steam 2 THEN flag3=1

2800IFfTaq3=1THEN2760

281@check (check) =team2: check=check+(2820Teague1=RNB(5)-1 28301 pague 2=RND (5)-1

2840data(tean1.5)=data(tean1.5)+(league 1-league2)

2850data(team2.5)=data(team2.5)+(league) 2860IFleaque1>league2 THEN dataIteami.2

1=data(team1.2)+1:data(team2.4)=data(tea m2.4)+1:data(tean1.6)=data(tean1.6)+3 2870TF1eague2>1eague1 THEN dataiteag2.2

=data(team2,2)+::Gata(team1,4)=data(tea #1.4)+1:data(team2.6)=data(team2.6)+3

2880IF1eaque1=leaque2 THEN data(team1.6)=data(team1.6)+1:data(team2.6)=data(tea m2.6)+1:data(team1.3)=data(team1.3)+1:da

ta(team2.3)=data(team2.3)+1 2890resultis=teams(team1)+" "+STR\$(leag ue1)+" "+STR\$(league2)+" "+team\$(team2) 2900tabi=17-LEN(team\$(team1))

Programming: BBC

2940EN0ER00 2960REM### SORT TEAMS INTO ORDER ###

29800FEPROCsort

2990F6Rcount7=07011:order(count7,1)=(da ta (count 7. 6) #1(b)(1) +data (count 7. 5) - certain(count 7: 10 securit 7: NEVT count 7

3020IForder (pass+1.11) order (pass.1) THE # A-order(pass, 0): Bronder(pass, 1): Cronde r(pass+1,1):Deorder(pass+1,1):order(pass

.8) =C:order(pass.1)=D:order(pass+1.9)=A: order (pass+1, 1) =8: flag=1

3040TEFT ACHOTHEN ENDERGO

20709FM###### TITLE PAGE ###### 2000

30900EFFR0Ctitle page 3100C0L0UR129: 0LS 3110000023.1.4.18.1

312800L00R131:0L6 3148906119.8.4+8+ 315000 (08)

3160PROCdouble height("ELECTRON SOCCER!

3170under Time#=STRING# (16.0HR# (2551) 3180PRINTTAB(2,4):under lines

320000N AUR 131

3220PRINTTAB(1.1):"OPTIONS:" 3230under 1 ine\$=STRING\$ (8, CHR\$ (255)) 3249PRINTTAB(1,2):under line\$ 325808L01P1 3260PROCdouble height("1. Instructions

3270PROCdouble height("2. Choose Team"

3288PR9Cdqub3e height("3, Start Game".

3299PR9Cdouble height("4. End Program" 1.143

372090028, 1, 30, 18, 23 3330U C

3340PROCdouble height("ENTER CHOICE".3.

3350VDU19,2,11:0; 3360ENDERSC

Programming: Spectrum

Ram Disc Utility by D Garner

sing this program you can utilise the Spectrum 128's Ram disc There are six options, as follows. 1 Transfer a Basic/machine code program or screen picture from tane onto the Rem disc

2 Quits the program.

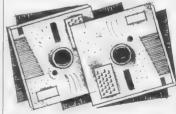
3 Allows you to load, in the normal way, a program or screen. Note that this option and option 1 use Merge so make sure that the program being loaded has line numbers under 9000. 4 Saves the current program in

memory on to tape. When loading or saving machine code the start address

5 Displays a catalogue of the Ram disc

6 Displays the same catalogue as above but to the printer using the Copy If you don't wish to type the program

in then send £1.75 for a tape to III Garner, 57 Lovers Walk, Dunstable



9100 PRINT AT 11,3-12 , 1041 PROBRAY FRO 9150 LET-AVAIL AND 9500 PRENT AT 13,3574 . SAVE PROSERY TO

2014

9000 May essessessessesses

9680 PRINT AT 7,3:11 , TAPE TO RAW TRANS

9149 FT AB-PRITYES ST ABOUT THEY SO TO THE

9150 35 A#C"5" OR P#2"6" THEN GO TO 914

9162 IF A+1 THEY GO TO 9200

9164 IF 4=2 THEN 8709 9065 JF 4+3 THEN SO TO 9450 900) PRINT AT 15,00°5 . DATALOSES (SCREE 9170 SF ANA THEN GO TO 9600

9175 IF A=5 THEN LET PRINTER=0: 90 TO 9 9130 IF A=6 THEN LET PRINTER=1: 80 TO 9

Programming: Spectrum

9200 CLS : PRINT AT 1.5: TAPE TO RAM TRA 9405 SAVE : NECESSE S.L. 9210 PRINT AT 5.2: "ENTER PROGRAM TYPE"

9220 PRINT AT 7.3:"1 . BASIC PROGRAM 9230 PRINT AT 9,3;"2 . SCREENS" 9240 PRINT AT 11,3:13 . MACHINE CODE" 9250 LET AS-INVEYS: IF AS-** THEN GO TO

9269 IF A#C"1" OR A#D"3" THEN GO

9270 LET A=VAL As 9275 IF A=1 THEN GC TO 9300 \$280 SF A=2 THEN SG TO 9336

9225 IF 4=3 THEN GO TO 9370 9300 YERRE ... 9305 TAPUT TABLE OF PROGRAM (UPTO 10 CHA 9513 CTS)

RS) ": LINE ME 9310 SF USN NAMES THEN GO TO 9305

9315 SAVE V#

9330 LOAD ""SCREEKS

9340 INPUT "NAME OF SCREEN ILPTO SCIENCE

9345 IF LEV VW 11 THEY GO TO 9349 9950 GAUST THEOLOGISTS

9390 LOAD **CODE 5.0

9395 INPLY WAYE OF CODE CIPTO 18 INARS. 9400 IF LEN VALLO THEN GO TO 9395

9410 60 70 9000

9450 0.5 : PRIVI AT 1.5:0000 4 290999M CO'V 7500 -

SALES SOFTED OF SITE AND ADMITTED PROPERTY TYPES SAUS PRINT AT 7,35°1 . BASTI PROSESS

4479 205VT AT 9.31-2 . SCREENS 9476 PRINT AT 11.3173 . MACHINE CODE! 9400 (FT 48+0)/EV9: 15 48+* THEN 50 TO

SHOULD ARREST ARREST THEN ARE

9495 LET ANSWEL AS 9536 3F A : THEN GO TO 9565 9511 95956 11

9515 35 As2 THEY 80 TO 9550

9513 TE 443 THEY 63 TO 9549

9533 TWELT CENESS PATER TO CONTINUES AN 9540 00 0 9 9366

9551 -- 040 11-0006 5.12

9633

SACO CLS & PRINT OF LISE SAVE PROGRAM TO PRINT AT 8.0: "TO CAT !

WARR DRIVE AT \$100 COUNTRY DRIVER TWOO! 9610 PRINT AT 7.341 . BASIC PROSRAY GETS PATRY OF ALBERT . HOWEVER CORE

GEOR TE MEZETE DE MENERS THEN DO TO 962

9630 LET AVVAL AS 9635 SE A=2 THEN GO TO 9670

9640 TYPHT PARTORIN LITHE (G=N0 ALTORIN) 9645 TWPIT "PROGRAM NAME (UPT) IN CHARSE

": LINE SE 9650 IF LEN NID-10 THEN 80 TO 9645 GARRE THE : OR THEN SAME NO. 10 TO 9000 TO 949 9660 SAVE NO LINE L: 60 TO 9000

SHOW THE "COME NAME (UPT) 10 CHARS) "I

1.79E 38 9690 IF LEN \$\$>10 THEN 50 TO 9676

9899 SAME NAMES I 9690 GO TO 9000

9700 TWRUT "START ADDRESS OF CODE : ":5 9705 IF 500 OR 5065535 THEN GO TO 9700 9710 TARKE SERVETH OF CODE : 111 9715 IF L10 88 L165535 THEN GO TO 9710

9754 FLS + PRINT AT 1.9: "CATALOGUE" 9760 PRINT AT 5.0: "FILES IN MENORY: ":

9765 IF PRINTER=1 THEN COPY : LET PRINT E9+0: G0 T0 9000 9770 EMPUT "PRESS ENTER TO CONTINUE ": L THE PE

9620 LET 48: TWEYS: IF AS: " T-EN 60 TO 9775 LET PRENTER: 0: 60 TO 9000 9786 : FT PRINTER=1: GO III 9750

Programming: C64

Minz

by Ken Smith

nd finally, this week sees part three of the listing. If you destroy III fifteen targets on a screen you move on to the next and are presented with a different set to blast. If you would like a fast load copy on

cassette send £2 to 73 Wakefield



Street, East Ham, London E6 1NR.	

Programming: C64

```
| Company of the comp
```

Programming: QL

Utility procedures

by A McMutrie

he following QL program features a number of useful procedures that be incorporated into your own programs.

Time shows the day, date and time in window 0 provided tille clock has been

set. Zd(n\$) gives a directory of the relevant drive.

Zim prints the amount of free memory. The commands thereafter all relate to Epson compatible printers, are well labelled with Rems and are self

```
31000 RSbark ** Utilities Start ****
31000 STBP
31000 BEFine MOCONAIR time
31000 STBP
31000 PRINTER, ";BMY8;", ";BMTES
31000 PRINTER
31000 CLS: AT 3,122**RRMT*BMECTERY BMY, ";rd
```

```
| Section | Sect
```

```
and constraints

of constraint
```

EXT Ear Issale strive can half built off me follows:

1985 UNA HOME TO SCHOOL THE Appelle Princeto Edit Schools 11 1005 SECTION DESCRIPTIONS

2005 Office PROJedice on Income

```
Daily 1504 med.

2014 1504 med.

2014 1505 Med.

2014 1505 Med.

2015 1505 Med
```

2585 165 he PMCeoure in recognition 2586 1554" 5-5090 100 fort to rester by

2008 RDark Time servicing Dir 51

```
30.2 (Spir. 247)c. B (red)
30.4 (Free Pickers service)
30.5 (Free Pickers service)
30.5 (Free Pickers)
50.4 (Free Pickers)
50.4 (Free Fickers)
50.
```

2005 OF NOT scode "NEW scores-Defences" 2005 OF SIGN Accords

Ram Disc

by Brian Cadge

he Amstrad 6128 (or other CPC's with added memory) features banked Ram which can be utilised by implementing a Ram disc, which is what this program does.

To make use of the Ram disc, after entering, correcting and moving the listing, type in Ramdisc. All file handling the Ram disc. To return to Amados type

Dien There are a few differences in operation from normal Amsdos. Ram disc filenames can be up to 10 characters long and can include any Ascii character The Ram disc directory has space for 20

error report will be generated. To arase a file use Kill. "program" on a

The hanked Ram is switched in and out at address 16384 by the program. Interrupts are not disabled so you cannot have an interrupt running in the address space 16384 to 32767

20 Rewiller Sesio Loader Program for 12 \$(7):810P

at system after oberviolety 400%

然 昭超 抽切掉。信件键

MATA STRUG IN LINE CHIEF CHIEF STOP

129 YEV" -

130 IF cs. 195701 THEY PRINT DATA ERROR - Oreco Theory and 0+88 (7, 45709)

ISC PRINTIDATA ERRER around line's listing

4. FF. NF. 11. AC. 46, 43, 36, CA. 3E, 2709 THE DATA 20.10.13.15.FC.41.11.40.46.7E.1

140 CALL 412019 PRINT REMOISS PERTATTENTS 250 SATA 37, 19,00,00,01,04,09,EB,09,EB,0 10.E0.50.AF.CD.F4.60.C9.7E,2553

241 0474 FB FF 03 00 03 FB FB 03 FB FB TB TB 03 80 465 460 TC 86 46 47 00 03 FB 30 1674 92.46.32.45.46 32.46.46.32.44.4 1.56.47 16.45 25.34.25.46.27 34.7 31 1 0474 (9 15, 31 13 31, 41 13 51 45 51 4 1 05 13 15 16 11 64 46 14 18 18 18 1 34: 54 9: P. B., P. B., T. B., B. B., B. A., S. B., B. R., B., S. F., Eb. 43: S4. M. M. M. 1991 HE 1474 BLAS BLAS BLAS 94.44, 4F. 44. FLAG SLEET BLEE 94.44, 4F. 7F. 7F. 7F. 7F.

F & & TT -F . TS -T . 94 . 61 . 15 . 51 19-30-40-126-79-79-79-126-25-25-25-49-365 73.4 p. ph. 17.51.01.72.72.73.12.72.34.20.24 47: 5479 AB, 46, 75, 63: 30, 37: 36: 10: 52, 45, 4: 3, 92, 66, 34, 44, 46, 36, 32, 44, 46, 2618 2 K.E. 49.94.46.E. 59.99 At 75.2496 491 (1474) 46, 76, 77, 77, 19, 76, 77, 19, 25, 24, 316, 36, 77, 01, 74, 40, 08, 25, 25, 75, 2004 500 5404 32, 44, 66, 51, 59, 35, 51, 32, 65, 44, 5 0, 38, 51, 32, 66, 66, 24, 54, 66, 75, 1946 520 3474 AL 4F.09. 15. 14. 46. 69. 61 65, 62.6 4 01 91. AL F1. EL AF.09. (6. 3486

3 5 EB. 20136 A6 E5 J1 JE1 J1 J6 136 1975 3 5.16.12.21.24.52 46.22.94,46.246 9 1.01.07.64.01.91.61.65.01.74.0798 481 0474 85.38.19.51.35.83.41.33.22.94.4

Programming: Amstrad 6128

0.60.00.00.86.FE.FE.30.46.66.FE.2341 680 DATA 63.29.40.35,00,30.46.46.F1.60.0 0.00.41.36.48.00.54.88.06.69.2300 6.9F. AA. 30. 77 10. FE. 6F. 05. 30. 2069. 590 DATA 91, F1. DB. 24. 42, 46. DB, 77. 04, 50. 7 (6, 50, 09, 14, 30, 12, FE, 14, 20, BA, 1883 70) DATA 97,00,74,40,75,53,96,48,48,42,E 6,6F,37,05,F4,69,55,00,61,09,964 710 DATA 28.56.69.67.69.00.93.41.23.22.9 4.69.73.65.63.74.66.70.79.34 1765 4.46,13.08,18.E7.F6.FF.37.09.2739 700 DATA S1, F6, FE, C9, 21, E3, A4, C9, 90, A1, A 0, 00, 66, 11, 46, 23, 56, 23, 56, E8, 235

5.C5.SA.BB.7E.SS.CF.CE.24.C5.2316

THE NOTE THE BEST OF THE SECOND SECOND SEC. OF LOSS OF SECOND SEC. OF LOSS OF SECOND SEC. OF LOSS OF SECOND SEC. 761 0474 CD-5A-5B-3E-1A-15-5A-5B-91-14-0 D-9A-A1-EB-CD-B3-A1-EB-23-13-2922 770 0404 05.00.00.54, 58.35.04.00.54, 58.7 D.01.14.00.09.4F, 05.00.41.5D, 2968 790 0474 10.19.52.61.61.64.69.73.63.21.4 8.40.46.ED.42.50.75.07.00.74.2872 935 5474 (5.53.4), 85.99 42.67, (5.46.4), 5 (.4F.E), 42.22, 42.46, (b), 54.40, 2447

820 DATA 00.6E.19.00.66.10.ED.49.92.46.0 840 0676 74.98.20.72.79.99.00.FF.F1.54.5 960 0474 19.01.14.00.00.99.51.0E.FF.12.6 970 DATA A6,30,32,44,A6,29,A2,A6,01,14,0

WD Software

For the SINCLAIR OL JOSS £15 on mdy or 51/4" flp. £17 on 31/5" flp.

Forget syntax errors and misryped names in the commended Just move a cursor and press SPACE. Cursor keys or joyatick allows access to up to 5 microdrives and all the disca your interface with handle, with upon 150 lises on each. Scroll & print discatorings, COPY, OBLETT or PRINT any file, select or Monitor mode before LOADing/RUNning a program. Use keyboard RefQL7 £11 on 2 mdvs or 1 31/5" flo. £9 on 51/4".

Por use with ARCHIVE 2, contains 1300 useful references and a searchiprint program. Find programs, articles and reviews buried in the magazines on

Midv extension cable (8") £5.50. Add 2X Microdrives to your QL Joystick Adaptor £4.99 For the QL, Spectrum (all), BBC & Electron:

WD Morse Tutor £4 cassette, £6 mdv or 51/4", £8 31/2". Teach yourself to read Morse Code. From absolute beginning to 18

For the Sinclair Spectrum (48/128k): WorDfinder 2 £8 cassette Jacy, 3 to 10 letters long

WorDfinder 3 £10 on mdv or 51/4" disc, £12 on 31/4". 19,000 word vocabulary, 3 to 12 letters long. Solves anagrams and missing letter words. Very fast machine code. Unders Whrthlinder 1 for #2 Spectrum disc versions are Opus, TR (Sets) and SPD1. We export herowers and third-party software. Ask for lists

ni edvance, in STERLING or British bank branches, internetional Giro, Postel Order or ACCESS/MasterCard. Add E1 outside Europe for ABMAL

WDSoftware (PCW), Hilltop, III Mary, Jersey, C.I. Tel 0534 81392

Amenta (PCW 8517
Amenta (PC 8128 years
DMF 2000 Printer on: few calls
DMF 2000 Printer on: few cal

SOFTWARE date bases

A Tata Obses II - PCW Sage retrieve - 6128/PDW Existen conder 1 5128 twen/PDW Carrisoft Cambase PDW
Campact Mucleus - PDW
Compact Mucleus - PDW
Compact delta 5128 twen/PDV
Rat. Sol. As last 1 6128/PDW nici datagen PDW S. Kvekhie CPC

WAVE

£69.00 (c £123.00 (b £80.00 (c £399.00 (a

2 3" Blank disks (box of 10) SOFTWARE GAMES

raperator – spat. Trivial Pursuit – Spat./BBC/CBM/Ams. Trivial Pursuit – Amstrad disc

Il prices include VAT Please add carriage indicated as follows: §) £5.00 (b) £4.00 (c) £3.00 (d) £2.00 (e) £1.00 despatched by neturn of poss

Walney Audio Video & Electrical 53 Shearwater Crescent, Barrow-in-Furness Cumbria LA14 3JP, Telephone: 0229 44753 (mail order)

Please Wait

by John Chasey

his machine code utility for the C64 provides the facility to pause a Basic program and wast for a key to be pressed. Whilst paused, the screen border flashes until a key is pressed. Then, the original border colour will be material and the program can continue.

80 FORX=49152T049181 90 READDT

100 POKE X,DT

120 NEXTX

130 IFY 4402THENPRINT DATA ERROR."

150 DATA 173,032,208,141,030,192,162 160 DATA 000,232,228,000,208,251,238

170 DATA 032,208,032,228,255,201,000

180 DATA 240,239,173,030,192,141,032

130 DHIH 508,036

READY.

Screen Scroller

by Alexander Hildvard

Screen scroller for any Amatred CPC enables a user defined chunk of the screen to be smaathly scrolled, one pixel at a time. for eny distance.

On running the program the start line of the scroll, number of lines to be scrolled and width of the scrolling area are requested. This format can now be saved for later use.

The program now displays the address to Call to start the scroll. 35 addr=15000

40 FOR n≃addr TO addr+44: READ a: POKE n .a: NEXT

45 INPUT "Starting line of scroll (0-20)

";m 46 m=m*80+49152: y=INT(m/256): x=m-(256*

y) 47 POKE addr+1.z: POKE addr+2,y

50 INPUT "no. of lines to scroll ";a 60 POKE addr+4,a

70 INPUT "Width of scrolling area (79 ch ars max.) ";b

80 POKE addr+11.b: POKE addr+16.b
90 INPUT "Save this format (Y/N) ";a\$

100 a\$=UPPER\$(a\$) . 110 IF a\$<>"N" THEN SAVE "scroll.lft",b, addr,50

120 DATA 33,&80,&c2,6,8,197,229,6,8,197, 6,&4f,229,126,229,17

130 DATA &4f,0,25,119,225,35,126,43,119, 35,16,249,225,17,0,8 140 DATA 25,193,16,229,225,17,&50,0,25,1

93,16,217,201 150 PRINT "Now enter 'CALL ";addr;"' to scroll"

8056 Translator

by Ralph Lorenz

he Serial 8056 printer has been around for several months now, originally marketed solely as a QL compatible, but no screen dumps have yet appeared for it.

The following QL program dumps a Mode 4 screen and correctly reproportions it to the size of the paper. Note that black and red appear as

Note that black and red appear as white on the printout and green and white appear as black. The screen takes around 30 minutes to dump an entire screen.

101 BALT 1230/098V #3.88F1F0LBAR

113 PROVI #3.1-RB(27);0-RB(49)+

130 PROVE #3.096#(27);096#(75);096#(0);094#(2);

140 F0R c=0 T0 127 9TEP 2 150 F0R p=7 T0 0 STEP -1

270 FOR 5=6 TO 5 575F -2

190 a=1310724128*1r=(5/21)*c 190 EF 99EY(a:M-(21p) T-EY non+(

290 NSFT B

219 PRONT #9,CHR#(nf) 225 MENT p

239 ND7 c 240 PSINT \$3 250 NS2T v

260 OL05E #3

Evesham Micros PRINTER OFFERS

Check out likes offers on top quality feel martin printers. All the modern detered are substitutionally replaced from the vermal high strengthce. Which are the light students of 10°C individual and the foreign Americanic Natl. Feel the Clieb Out Size on payory a new part contraction clieb for Feeders on CL merers an approprial is identified on applyable for an extra 120.00°C for Americanic Feeders on CL merers are approprial is identified on applyable for an extra 120.00°C for Americanic October 100.00°C for extra 120.00°C foreign is by impract enough collector, and refers are foreign than 10°C foreign of the 10° to read the next working day after receipt, provided we have since

Micro P MP165

The best NLQ of any printer in the price range? Many people think

Standard features include friction and tractor feed. 2K buffer. This printer must offer the highest specification available for the

Superb near letter quality print and high draft speed make the MP165 an outstanding buy at this price. Italics and good underlining along with many other print modes confirms the FACT -

THIS MUST BE THE BEST PRINTER OFFER IN THE COUNTRY ONLY £219.95

Price includes printer lead to suit your mic Or to suit Spectrum £239.95 including Centronics "E" interface

PANASONIC KX P1080

Now available at a rearly competitive price. This printer has a fit fit P of CRS + VAT. Features are, 100cps, Friction and transprised, easy access "ap switches" easy planne

A sample of the impressive N.L.Q. from the Panasonic KX P1080 N.L.O. available in Elite (12cpi)

and italic modes. Superb value from Evesham Micros High quality from Panasonic Two names you can trust

ONLY £199.95

Price Includes Centronics read to suff your micro.

Or to suff Spectrum with Kempelon "B" Interface C219.85

STAR ML10 few high specification printer just released. All the caust features PLUS says front panel selection of most modes, semi-automatic single sheet leed AND plug in interface cartridges, Choose between standard centroscop garallel. IBM: or OUR PRICE: ONLY \$269.00

AUTUMN SPECIALS

(these proces include var)

ATARI SZOSTM c'w SF334 Disk Drive S49.00

FREE "THE PAWN" WITH ALL ATARIS 5)* 3M OSCS (sector of tern) SS(DD (11.95 DS(DD (14.95 SS/00 (11.95 US/00 E14.95 or to plastic Rivery case SS/00 (12.95 US/00 (15.95 3" 0600 (auct America)

TROWRRIDGE COMPUTER SHACK

ATARIST

VOUR SPECIALIST DEALER FOR

WEST OF FNGLAND

FULL RANGE OF ST SOFTWARE. PERIPHERALS. IN FACT **EVERYTHING FOR THE** ST

8 Timbrell Street Trowbridge, Wiltshire, Tel: (02214-67299)
PRESTEL MBX NUMBER 221467299

HARTLEPOOL COMPUTER SERVICES LTD.

BBC from £260 CBM 64 from £100 1BM from \$600

dock here due to lack of space

WHY NOT SEND US A S.A.E. and we'll get a current price list off to you the same day? We obviously can't show much of our

If you have a modern then by dialling 0429 234346 you can log onto 'On-Line Systems' - nur 24 hour Viewdata & Bulletin Board system. You can use any Band rate from 75 to 9600, either Viewdata or seculing Acci. Send us a 6 on room, easier vice-data or scrining Ascit. Send us a 6 digit paceword with your request for a catalogue & we will return a user No. You can still view the system without

though. Just follow the prompts on the log-on gage. RAILWAY STATION, HARTLEPOOL, CLEVELAND TS24 7ED

Tel: (0429) 869988 One to One - 14315001 Telecom Gold 83: NTC 083

MSX LATEST	
King Size (50 game)	€9.95
Confused?	€8.95
Eggy	€8.95
Panel Panic	£2.99
Moanider	£2.99
Spacebusters	£2.99
Snakehit	£2.99
ice	£2.99
Mazes Unlimited	€2.99
Robot Wars	€2.99
Footfally	
Vestron	£1.99

LATE ARRIVALS

Frontline MSX Artist

£3.99 PACULTY ENTERPRISES LTD
29 Rutland Court, Ponders End, Middlesex
Tel: 01-805 8054



With Konn Garroch

The nature | Sin D.M. Ford of Newmort Gwent

weiter

1 am Jesming Basic and would like to know what the Sin, Cos. and Tan functions really mean. I know that they are something to do with triponometry and circles, but could you exntain why and show some uses for them?

Sins and cosines are to do with circles, in the following way. In the diagram, the line H (hypotenuse and radius or the circle) forms an angle III with the line A. The length of A is from the centre of the circle to where the line P meets it. The lines A and P meet at a right angle so the definitions of Sin, Cos. and Tan are

SINIST PIN TANIble A/P

cos

As the angle b changes so that the line H m always the legaths of the lines A and P change in length. From the above formulae, you can see that P is dependent on the Sin of h and A is dependent on the Cos of III.

If you then imagine the circle rolling along horizontally, a point (in the diagram the left most point on the circle) on the circle will describe a Sin curve as shown in the diagram. If it rolls downwards, the point describes a Cos curva

Or, looking at III another way, as III vanes, the length of P varies non-linearly between +1 and −1 (presuming the radius of the circle is one and the centre is taken as being at Ol and this non-linearity is defined by Sin. The same applies to A which is described

The angle b varies through is 0 to 360 degrees or 0 to 2xπ radians (1 radian = 180/π degrees when x=3-1415926). Most computers work in radians so. Sin and Cos can be used by a computer to draw a

10 FOR T=0 TO 2*3-1415926 20 PLOT COS(T)*50+100 SINITI*50+100.

Here, the position of each point is specified by Sin and Cos with T being the value of the angle. The result of Sin or Cos is always between +1 and -1 so unless the circle is going to be very small, the values need to be multiplied up by the value of the radius,

in this case 50 The absolute position of the centre of the circle is set

radius of the circle, the

by adding a constant to the values of the horizontal and vertical points, in this case 100. You can change the shane of the circle to an elipse by making the two radii different, the larger being the radius of the long axis the smaller that of the short axis.

Tanibl is Sinth1/Cos(b) and varies between 0 and on linfinited as the apple E poss from 0 to 90 degrees (0 to m/2 radians). It is related to the tangent to the circle (hence the name) which is at right angles to the radius line

You can see that it is 0 when b=0 since the length of P is zero. When b is 90 degrees, the value of TAN(b) is on since the length of A m zero and anything divided by 0 is or. If does not have that many uses in general programming unless you are specifically dealing with maths problems.

Monitor switching

A Henson of Dudley, Birmingham, writes.

I have an Amstrad CPC colour monitor and I would like to use it with my BBC micro. III this possible?

Yes, plug it into the RGB port - the connections are identical

Garbage collection

tan A King, of Greenford, in Middlesex writes

your reply to Mr Brumpton of Clapham, London (Peak and Poke, August 28) is misleading and does not point the way to a solution to his problem, although your basic reasoning is in the right direction. Garbage collection is

indeed performed the first time within a program in which either Openout or Openin is used. This is done in order to provide space for a buffer for file transfer. Unfortunately, the garbage collection is performed regardless of precollections. wione whather forced by Fre or otherwise. Subsequent Openouts or Openins do not require this as the file transfer buffer is preserved once II has been set up.

The solution to the problem is to force a file transfer allocation as early as possible in the program, is, before any string work, so that garbane collection is a minimal task. This is achieved by a line such as:

10 OPENOUT "DUMMMY": MEMORY HIMEM-1:CLOSEOUT

The only restriction on this line is that III must be placed after any Symbol After commands.

The example program given in Popular would give a delay of only two seconds or so as all the NameS() strings are identical and thus only one copy is stored, pointers for NameS(1), NameS(2), etc, all pointing to the one storage area, the same applies to Addr1SI). Addr25(), etc. If line 30 were changed to read:

SONAMESSITS+"AAAA"+CHRS 120 - Th ADDRIENTI-"BEBBBB"+CHRS

etc. making each string unique, the waiting time will be in the order of two minutes as experienced by Mr Brumpton and the peed to overcome this, as above, becomes more of a requirement.

I cannot claim credit for this solution - it can be found on page 2.6 of the Amstrad DD-1 disc drive manual.

Okay, i'm not perfect, my thanks to Mr King for providing and explaining the solution

Is there anything about your computer you don't understand, and which everyone else seems to take for granted? Whatever your problem Peek it to Kenn Gerroch and every week he will Poke back as many answers as he can. The address is Paak & Poke, PCW, 12-13 Little Newport Street, London WC2R 3LD

Vouill he nuts to miss this show



There's a bumper crop of goodies for the Spectrum and Q1. User at this year's Autumn Microfair in the Central Hall, Westminster, on

Soturday 25th October 86' See all the New Season's products including the New Spectrums. - plus the usual fantastic Microfair bargains, with big reductions on selected

hardware and software The Show affers full support for all the SINCLAIR machines (and compatibles), with a huge range

and magazines on sale - just about all you wanted for your computer under one molt

Talk III the experts on the User Club stands or find special bargains at the bring-and-buy.

You'll enjoy a great day out in a friendly atmasphers Send MOW for the reduced price advance tickets on the

coupos below You'll be nuts to miss

AUTUMN MICROFAIR

obia about



25th October 86'

At the Central Hall. Westminster SW1

10am-6pm

Admission £2.00 (Adults) £1.30 (Kids under 14)

SEND FOR PEDUCED PRICE TICKETS TODAY

Please include a stamped, self-addressed stryclope and gode chapses? Exhibitors ring Mike or Moirs on 01-801 9172 for details of stand availability



Once Bytten III BOWNESS BOAD LONDON SE6 2DG Phone Orders: 01-698 2911

IT'S THE WAY WE SELL 'EM! THAT MAKES ONCE RYTTEN DISC THE BEST BUY, TOP DUALITY FLOPPIES FROM TOP FLIGHT MANUFACTURERS 180% ERROR FREE - LIFETIME GUARANTEE AND NO HIDDEN

FYTRAS ... WHAT YOU SEE IS WHAT YOU PAY. SPECIAL OFFERS

POR AUTUMNAL EVENINGS IN PRONT OF YOUR MICRO!!! H SLEEVES, LABELS, WHITE-PROTECTS AND HUB-RINGED:

IN LIBRORRY CASE WITH LABELS:

Bulk Unbranded Discs with sleeve 101 BOOK 1754

C BOXES 10 Capacity 1 + £1 50 10 + £1.25 100 Capacity Locking 11 + £11.95 12 + £10 00 51" 10 Capacity 1 + E - EXTRA ENYELOPES 51" 10 + 9p 50 + 8p 100 + 7p 1 ABFI S

ALPHACOM 32

High quality thermal printer for all Spectrums at a give-away price

only £19.95 (p&p insurance £3.00)

COMPUTEC MUSIC UK-(0902) 405100

HARDWARE

Prophet 5 to MIDI interface £100 mc VAT Chroma to MIDI interface £299 inc VAT DX Voice Vault

Decilionix The Box DX7 ROMs from Skyslip and Rittor Shadow GTM6 guitar to MiDi

Steinberg Syntech Passport C Lab Joreth Microvoz Treesoft DHCP Letti MIDI soft XRI Systems Icon Cheetah Roland Exc Roland IXBP Editor for the Commodore Prophet 2000 Editor for the Commodore

Overseas Customers Welcome UK Send Cheque or PD for £1, Overseas send £2 International Money Order, for facts mack and price list.

* The only music-software specialists in the country *

24 HIGH ST., BROCKMOOR, BRIERLEY HILL WEST MIDLANDS DYS 3JA



FOLLOWING OUR GREAT SUCCESS WITH

"SPLIT PERSONALITIES" AND

"TRIVIAL PURSUIT"

WE HAVE LOTS OF NEW IDEAS AND WOULD LOVE TO HEAR SOME OF YOURS

IF YOU RUN A PROGRAMMING TEAM, WHO CAN PRODUCE A GAME FOR MOST (IF NOT ALL) OF THE HOME COMPUTER RANGE -THEN WE WOULD LIKE TO MEET YOU.

TOP BATES WILL BE PAID. SO ... RING RICHARD ON 01-947 5622

AND LET'S SEE IF WE CAN DO BUSINESS TOGETHER!

from E & J SOFTWARE

48K SPECTRUMS

PREMIER LEAGUE PRECEDITED ALL AND EXCITING LEAGUE GAME — FEATURES INCLUDE ring, Team Selection, Substitutes, Helf-Time Scores, Full Squad Details, ned Goal Scorers, Team Styles, Sare Garne, Francis Problems, File Jes, Transfer Market, Injures, Continuing Sessons, Prietter Option, PLUS MANY MORE!

EUROPEAN TROPHY

BUPERS LUROPEAN COMETITION STYLE GAME WITH THESE FEATI tome and Away Legs. Away Goals Court Double. Two Substitutions Alle Avata Time, Pentalty Shoot-out helds sudden deaths, March Injenies. Injur-fatch Penalties, Fhu Sail Levels, Pre-march Reports. Team Selection In Goal Scores, Save Game, Printer Goylon, Plus Marky MORE!

* * * SPECIAL FEATURE * * *

Transfer your PREMIER LEAGUE wilming aids into EUROPEAN TROPHY Both these games can be played experitely or as COMPANION GAMES. * * * Gemes £5.25 each * * *

SPECIAL TWIN PRESENTATION PACK OF BOTH GAMES AVAILABLE AT ONLY £9.95

AND NOW! -- WORLD CHAMPIONS citing World Cup Foorthell Management simulation talking you from the first op file-office strongly his qualitying stages. Your matches of one of the property of the property of the stage of the stage here. Outsighteny Table. Pell Results List, Match Stagemaions. Chang or Team Name. Laegue Tables. Served Stall Levels, Serve Gerze, Prints Obtion, PLUS MANY MORE!

WORLD CHAMFIONS features is superb comprehensive text match skinular including the following: Metch Times, Francis Goal Scores, Goal Times, Come Free Kicks, Injuries, Bookings, Penalties, Sending Off, Injury Time, Extre Tim Penelty Shoot-out.

* ALL THIS AIR THE UNBEATABLE VALUE OF £6.96 *



All garnes now in stock for immediate despatch — order year FANTASTIC VALUE — ORDER ALL THREE GAMES FROM ONLY £15.95.

E & J SOFTWARE, Room 5

37 Westmoor Road, Enfield, Middx EN3 7LE





Loony Bins, Drake **Nets and other** modern mysteries

David Wallin responds to questions of boardom and meets the real Adrian Mole

ast of my mail seems to be about new boards, and this week's batch is no exception. Firstly, a letter from Dave Every, the Sysop of Drake Net. Drake Net is a Micron board and Dave says that some people are trying to log on but are unable to. He has three ideas as to what may be wrong, namely

1) They are using the wrong type of equipment. A micron board may only be accessed by a Spectrum, BBC or C64 with the appropriate modern 2) They are using incorrect software.

Micron software must be used, and is available on Prestel/Micronet on the following pages: Spectrum - Page *600613517#; BBC - Page *8106542#; C64 - Page *600617282

The software is free to download, but if you're # Spectrum owner who does not have access to Prestel/Micronet then it can be bought for £1 (postage, tape etc) from Micron Tape, Dave Every, II Turnbill Gardens, Chaddlewood

3) They are using the software/modern Incorrectly. To use Micron software on the Spectrum, with a VTX5000 modern you should break into VTX5000 main menu (Do not use option 7); place modem in TX mode: type New: load Micron software; select option 0 - Log on; dial 0752 330176 (or the number of any micron board); wait to hear the carrier tone: go On-Line (Put the silver switch on the front of the modern down); hang up phone (phewl)

Dave also included a brief description of the format used by a micron board, which is very similar to that of a viewdata

Pages may be accessed by "page_ number=, ie, *280#. Page 90 is used to log off, ie *90= to

Menus are available, and the number

of the desired function is selected by pressing the relevant number Lastly the times for Drake Net have changed. It now runs Monday to Friday

10pm till midnight on auto answer There is also another Micron hourd now on-line. The details of this one, called Safety Net, based in Scotland, are

as follows: the sysop is Peter Holt, its hours are Monday to Wednesday, 8pm till 10pm, and the number is 041-778

The sysop also gave his Prestel mailbox, which is 417783426. One interesting thing about this board in that although it runs using Micron software on a Spectrum, it also nins on a OI | The board runs on a Spectrum and a Oil linked together using a network facility. This should give the board some interesting features, so why nor give it a roy and see what it has to offer? Remember that it is micron, so all the points Dave Every made above apply to this board

Another board recently put on-line is the nicely named Loony Bin. This hoard is open 24 hours, and the number is 0709 546254. Speeds are 300/300 and 1200/75 (8N1).

The sysop's name is Adrian Mole. Yes, it really in. The board has an adventure section, with clues, although it is not an adventure orientated board: there are other sections, including music, a hitchhiker's quide (7) and hi-fi. There are also BBC downloads for what sysop calls proper' users. Why not communicate with Adriso Mole?

A new board in the Itec range is now on-line. This board is called Hitec -

Hitec is the Middlesex training centre's viewdata system. It was created by and is maintained by YTS trainees and supervisors. The information on the Hitec ranges from local Hillingdon area information, through computer news, to information about Middlesex training cantre itself. Other features are jokes pages, guizzes, a gallery, games reviews articles on local history, a list of local organisations, and machine specific databases (Amstrad, Sinclair, Acorn, Atari Hitec has mailbox facility to leave

messages to the sysons. Hitec in a viewdata system, so the speed is 1200/75 and the protocol seven bits, even parity and one stop bit. It runs on a BBC B, with twin 80-track double sided disc drives, and uses Cummunitel

The board is on-line 24 hours a day, 365 days a year. h will, however, be offline for up to one hour each day for mailbox collection, etc. The time should be well under one hour as it is basically for maintenance of the board, and done daily this should not involve much work

The system allows advertising at the cost of £1.50 per frame per morth for businesses and free at present for private ads. There is a discount for keeping the advert in for # long time and a fee may arise for private ads in the future. Remaining details include the system operator (David Hook), the design coordinator (Nick Lewis (May)) and his Prestel Mailbox: 08953 17261, the frame manager (Terry Naughton), and of course, the phone number: Uxbridge (0895) 59842. As with other Itecs, the board is free to use.

Next a request for help from Tony Surridge. His problem in that he has a Tatung Einstein, WS2000 modem, Tatung TP-100 printer and Kuma software and can't seem to auto-dial with his but for various reasons there is not a vast amount of software available for it. But it does run CP/M which means that there should be a fair amount of terminal software available (it may need installing thought) and one piece may well suit the needs of the Einstein.

It may be worth trying to get UKM7, which was explained in an earlier article. Otherwise, Tony, I think you're right, you may be best to change your equipment. but if you do this then you need only change the modern. If you were to change to an intelligent modern, say a WS4000, then all your auto dial, baud rate selection problems will be

You could also try a log on to PUBB. which is the only I know of which runs on an Einstein, and the sysop may well be able to help you out. The number of PUBB is 0594 52287, 1200/75 and 300/300 baud; hours 6pm to 8am Tony also wanted is know about BBs

with an SF section or Sig. I don't know of any off-hand, but I'm sure that there must be some. If anyone knows of one then let Tony know. If you leave him a message on Cyberzone BB (01-638 2034, 300 buad, 24 hours) he should

Lastly. Tony points out that many boards seem unfriendly to the new user. They have large menus to be memorised, with up to 30 options. This is of course, true, but I'm afraid it's a fact of life in communicating. A good board must have a lot of features and so must have large menus.

Win your share in our £2,000 giveawa

been waiting for. The culmination of our great Movie Quiz. Ah. the nervous licking of lips, the sweaty palms, the slight trembling of fingers.

Here's the entry form and your chance to win a share of the sixty-five great prizes. Remember, the first five correct entries out of the hat each win a Spectrum Plus-Two. The next 10 correct

and there are fifty Magnum joysticks from Mastertronic as runners-up prizes.

Over the last four weeks we've printed eight stills from classic science fiction movies. Recause some of you missed a week (we've told you before to place an order with your newsagent), we've decided to be remarkably generous and have printed them all again here.

All you have to do is to identify the eight movies from the accompanying list (yes, there are a couple of red herrings). fill in the entry form, and send it to the address shown before Friday. November 7 Just like that. No catches, no underhand tricks

Winners will be announced in Popular Computing Weekly issue dated Novemher 20,26. What are you waiting for?







Photo No 3



Photo No 4

Photo No 1



2010 Star Trek II

Dark Crystal

The Last Starfighte Star Trek III Blade Runner



Logan's Run The Empire Strikes Return of the Jedi Emmanualle Meets the Martians





Photo No 8



Photo No 7

Quiz. Popular Computing Weekly, 12-13

Send the entry form below to: The Movie Little Newport Street, London WC2H 7PP. Only one entry per person. No correspondence will be entered into, and the Editor's decision in all aspects of the competition is final.

think the eight movies are

amputer currently owned

Address

Telephone ..

THOUGHTS & CROSSES (COMPUTERS) LTD. 33 MARKET STREET, HECKMONDWIKE, WEST YORKS COMPUSER SOFTWARE - COMPUSER SALES S It or offices a ballotte of NA SPECTRUM OISK DRIVIES er selfes er selfes er sjallo self er sjallo self stille self I SSTO HOD MARKES MTSD + MARKES MTSD + MARKES MTSD N.C. DAIBY PRINTERS PRINTER ACCESSORIES COMPACT DISKETTES Technic 1 ATARI ST SOFTWARE Life Computer Proph Actual Act PRINTER INTERFACES INTERNAL R\$232 TYPE PVC COVERS CLASS CANNERS RE CLASS CANNERS PROVIDE STATE PROVIDED TIME STATE MARRING WITH BUTTER STATE MARRING SEC. 128 SURFER STATE MARRING SEC. 128 SURFER STATE MARRING SEC. 128 SURFER STATE EXTERNAL CENTRONICS TYPE print interface 5 care for Specimen ion Coulomb for Specimen and coulomb for Specimen in Sections in the USA 4327-9036 (SMMX) at a 70-34 for CB VECTS-54 at facilities in 1862/20 consumer PRINTER RISSONS SINCEAIR PRODUCTS BBC PRODUCTS

Tel: (0924) 409753 for Access, Visa, Mastercard American Express Tel: (0924) 402337 for General Enquiries.

TELEX 556577 CROSSG Shop open brigan Non-Syr, Mail Order Brigan Nov-Go

ALL PRICES INCLUDE VAT AND CARRIAGE EXPORT ORDERS WELCOME ASK OR SEND FOR PRICE LIST

The micro's always musical on the other side of the pond

Mark Jenkins turns Stateside to let you know what's horne in the USA

In the recent Music Supplement we looked at some of the micro packages becoming available in the States, atthough some of them may not reach these shores. We concentrated on the Commodore 64 simply because III has established a huge user base in the US, and so continues to be popular for musical anolications.

musical applications in Commodors my But it's not just Statistical attention, after a long thinking period the Atian 5208T and 1040ST have become popular with software houses, and offer the obvious musical advantage of built-in MIDI In. Dut and Thru tithe Thru function is wired to the spare two pris of the Dut socker, in an imagnative cost-saving confusion.

Apples are also popular in the US, and while the Apple II has now been discontinued, its successor the IIGS will run most III-/III-/III software at three times the normal speed and selfs for £995. It uses a 16-bit 65C816 processor, has Apple II companible expansion slots, and has a built-in Ensoning Mirage syn-has a built-in Ensoning Mirage syn-

Well, that's a bit of an exapgeration. What the Apple does have is a C-chip, what the Apple does have is a C-chip, the heart of Ensonia's Mirage sampler. ESQ-1 digital synthesiser and DSP-1 Sampled Piano. The Q-chip offers 32 cociliators, of wishch 30 are swalable on the new Apple to create 15 dual oscillators of the rovices. There's a built-in Analog-to-Digital convertor for sound sampling, as all you need is appropriate software.

Several US companies are already moured to be working on such software, which may well make life difficult for companies who make a bining by adding sampling facilities at 16-bit computers such as the Aster (the Hybrid Sart ADAP sampler would appear to be at risk, for hold of the new Apple when it is available over here and compare is to an Erisonia Wirage or similar sampling keyboard.

Apple's Macintosh is also popular in the US, although in works out quite expensive over here when you consider the cost of adding a Southworth or passport MIDI interface to run packages such as Southworth's Total Music, which has the unusual distinction of being able to record four MIDI injusts. "On the Atari 520ST you'll be able to obtain many Hybrid Arts packages over here very soon. DX-Draid is interesting — it creates new sounds for jaded programmers who don't want to specify more than 3 or 4 parameters".

simultaneously. This means that your whole band can play together and have the data recorded via MIDI for later addition.

On the Atan's 520ST you'll be able to obtain many Mylor Arts packages over here very soon. DX-Droid is interesting to retreate the every soon. DX-Droid is interesting and DX7 synth for jaded programmers who don't want to have to speelly more than three or four of the 147 parameters which go to make up each sound. Also from Hybrid comes the screen of the CaP-Droid, which does the same job time 6-days great the 520/1040 and also for the chapper of the 520/1040 and also for the chapter 100XE.



The new Apple



Dr T also has saveral Atari packages, including a Casio CZPatch Editor/Librarian for the 520/1040 and a keyboard Controlled Sequencer coming up this one only runs on the Commodore C128 at present), Dr T, 68 Louise Rood, Chestut Hill, MA 02 167. Tel: 0101 617 244

Virtual Sounds has what seems like an interacting new package – Soft Synth, which generates synthesiser sounds as software on an Atari 520 or Macintosh and downloads them to a sampling keyboard such as the Mirage or Prophet 2000. Both keyboards could do with a little help on the synthesising side (although they're great for sampling) so

Soft Synth could be a godsend.
Virtual Sounds, 557 Tremont, Suite
11, Boston MA 02118 USA, Tel: 0101

Opcode. Mark of the Unicorn and many other US companies are manufacturing excellent compositional packeting of the Applie Macintosh and IBM PC, both of which are a little outside our price bracket for current discussion. Many companies have developed a package for one micro – perhaps the Atati 520 – and claim to have the C128 or other version on the way, but, of course, it's difficult ## find out when this ## likely to happen.

A couple of companies over here do seem to be getting US products over — they are Rod Argent's Keyboards (main-ylor Appel Maincribsh and more upmar-ket stuff) and Syndromic Music (for Hybrid Arts and a few other imports). A London store called Take Note siso has a wide range of computer packages on constant demo, and we'll check them out shortly.

Rod Argent's Keyboards, 20 Denmark Street, London WC2, Tel: 01-379 6690. Syndromic Music, 24/26 Avenue Mews, London N10, Tel: 01-444 9126. Take Note, Tel: 01-485 2988.

If you have any queries or tips for this column, please write to Mark Jankins at Popular Computing Weekly. 12-13 Little Newport Street, London WC2H 7PP. Mark would also welcome examples of your own music on audio or program tape, or disc.

(CLASSIFIED)

SOFTWARE

NEW FROM KBS-INTERACTIVE SOFTWARE

'ENGINE DOCTOR' - FOR EVERYONE

- RALLYING
- MOTOR RACING
- MOTOR CYCLING OIV MECHANICS
- THE PERFECT PRESENT
- 'ENGINE DOCTOR' THE EXPERT

■ DISMANTLE/REBUILD ANY FOUR-STROKE ENGINE

- STEP-BY-STEP SCREEN AND PRINTER TIPS
- BRIDGES THE MAINTENANCE MANUAL GAP
- PRINTS OUT ENGINE CHECK LIST
- PRINTS 'SHOPPING LIST' OF SPARES NEEDED

'ENGINE DOCTOR' - FOR MOST HOME MICROS ● GOOF-PROOF

- JARGON FREE
- IN SCHOOLS
- IN COLLEGES
- INVALUABLE

All this for just £49 inclusive If those aren't good enough

reasons for buying 'Engine Doctor' for yourself (or as a present) . . . here is another!

For every 'Engine Doctor' order enclosing a KBS corner tab we will deliver a bouquet of flowers to anyone in mainland UKI

> GO ON . . . BE A **BIG SOFTIE!**

ORDER CHECK LIST

● FLOWERS ADDRESS ● USER FORMAT

CHEQUE/P.O.

KBS-INTERACTIVE SOFTWARE FREEPOST NEWCASTLE HOUSE.

HIGH SPEN, NE39 2BL, Tel: 0207 543053

ORDER ADDRESS



ATARI cames and HTI is for sale on prices Also disc drive Enchance ments "Happy" etc. Send S.A.E. lists

PCW8256. Heapfa C. The Knds. Chusic, Wordstat, Feinlight, CPM software

TORCH Z-80 disc pack 64K upprade unit for BBC III with twen BQT disc drives and BBC basic software for word processing, spreadsheet, date KDS 104 modem. Amstrad 464. 5128 compat New, unused because BT too attentive. Helf price [76.50 Call Alan D89 388 2140

monitor, £275 on o Tel 0244

APPLY for a computer Penpal, Please

ELECTRON with Plus 1 and Plus 3

AMSTRAD CPC6128 with colour monitor, ROM board, RS232 inter-Eige and HHGTG £350 Tel 01-366

Computer Swap entires are limited to 30 words All entries case £2.50 Please enclose a cheque or postal order or give Access or Bardaycard No m the box provided. Only text appearing in the grid will be pristed. Send the form to: Computer Swap. Popular Computing Weekly, 12-13 Little Newport Street, London WC2H 7PP

COMPUTER SWAP

PLEASE NOTE All software offered nal condition and for private sale only. will III accepted.

Warning: It is illegal to advertise pirated.

COMPU	TER	5W	AP
nital latters on the Seas before			

Please charge my Visal Access card no:

SUMMER PRICES HELD UNTIL OCT. 31st AMSTRAD PCW8256/8512 Hardware C2E 00 256K RAM expansion quality tested components only Quality soft PVC Dust Cover Set only Printer ribbon F5 60 2 Ribbons £10.95 £145.25 CF2 Disks box of 10 HARD DISK PHONE FOR DETAILS 2nd Disk drive. £36.25 Software dBASE 11 Powerful PLEASE PHONE FOR ADVICE ON THE RIGHT DATABASE FOR YOU MAP Integrated Accounts. £125.50 Scratchpad Plus CAMSOFT Integrated System. £136.45 £58.25 SuperCalc 2

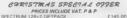
Porket Wordster Neuword 2 & Word & £42 20 Typing Tutors: Touch 'N' Go & IANKEY... £21.80 CHIT CHAT Combo DR CBASIC, DR PASCAL, DR DRAW, DR GRAPH 3D Clock Chess Quantity discounts available with 2 or more software packages SINCLAIR OL Super O Board 512K NOW WITH THE EXCELLENT TOOLKIT 2.
Super O Board 512K with dual 31" NEC Drives.
512K Expanderam £115 O 10 x 31" DS/DD disks. £25.00

Serial cable... NEW ITEMS FOR PCW ..£34.99 ..£69.99 Music & Sound Generator Electric Studio Light Pen .

We now stock quality software and hardware for the RRC and IRM PC. Send S.A.F. for details Prices include VAT & POSTAGE

PHONE FOR FURTHER DETAILS All products are offered subject to availability

PERIPHERY 117 GAINSBORGEGH AVENUE, OLDHAM OLB IAJ. TELEPHONE: 061-626 5802



SPECTRUM 128+2 AMSTRAD CPC6128 (colour) ALL AMSTRAD ACCESSORIES AVAILABLE

MAIL ORDER CUSTOMERS PLEASE MAKE CHEOUE PAYABLE TO **NEWCROWN COMPUTERS LTD** 98-100 HIGHTOWN ROAD

LUTON, BEDS LU2 ODQ (U.K.) TEL: 0582 455684

FOR FAST RELIABLE SERVICE SPECTRUM £16.00 REPAIR

WE ALSO REPAIR COMMODORE, ORIC, VIC 20, BBC, AMSTRAD, ALL OTHER PRINTERS, INTERFACES AND DISC DRIVES WITH 3 MONTHS! WARRANTY ON REPAIR SEND COMPUTERS WITH DETAILS OF FAULT

YOUR PERSONAL CENTRONICS PRINTER ORAFT DOT MATRIX UNBEATABLE **NEAR LETTER QUALITY** SUBSCRIPT SUPERSCRIPT **CONDENSE EMPHASIZE** ● 96 CHAR+48 EURO+16 MATHS • EPSON/IBM GRAPHICS **OPTIONAL TRACTOR** LES STATION REH LES SECTER IN LANG TEL:0533 313531



SPECTRUM 48K software for sale

CBM 54, CNZ, disc drive, monitor including £1800 of softwere, much iovatick etc. Great value £900. 0767 317885 after form

f33.0



£12.49

(38)

UK HOME COMPUTERS CO AMSTRAD PCW 8256 plus Supe Catc 2 New Word, Dalta and Card Box £820 in May 1986 - will sell for £550

COMPUTER HIRE RING BE -607 0157 tr 01-997 6457 WE SPECIALISE IN BBC AND ALSO HAVE A RANGE OF AMSTRAD COMPUTERS FOR COMPUTER HIRE SERVICES 294A CALEDONIAN ROAD LONDON NI 18A

CASSETTE COPIES

SO COME FOR ONLY DAD INC. P.+ P. FROM YOUR CASSETTE MASTER IN REAL TIME PLEASE PACK

IN FOIL AND SEND CHECUF TO-COLINERS BOOD ELEAR CROFT, BOTTOM LANE. SEER GREEN, BUCKS HP9 2UH. TEL: (04848) 5800



AR COMPHIERS & ELECTRONICS

* Mexities as Epoce, Conor. Cook Call Us On 01 568 7149
123 Thorntony Road, Ostarlay, Islamonth, Middlesex TW7 40G, Telex 937400 ONECOM G.
Ref. ABLTD.

The lst choice EXPRESS SPECTRUM, BBC and COMMODORE REPAI

WHY PAY HIGH SOFTWARE 239.00 FREE WITH EVERY REPAIR FIXED. PRICES

Fency premises by charging high fixes' prices() Heputations case time to build.

Heputations case time to build.

He have been repeting ZX 61 %.

Spectrums, QU's. Applies and

BBC's prefessionally, for 204

years - with its common.

CCD - The firm it was on my ne seary repairs over the hinds minutes Based in some BARDOSSF can offer anguistry the FASTIST COULD'S Mapping JUNE 1985 COULD'S Mapping JUNE 1985

consoliters every week we are able to pass on our 'component' busing discount' to YOU in lower prices 280A cpu 61 SQ, 41 15 SQp, Upgrade fitted £18.95 ttac £18.95 we bring down the prices for spars and components?

other on conductions we what we do today

Promotes Lane Law Manufactor M19 3.5

Phone 061-224 1888 DR 061-224 9688

ZX81

15K RAM

MANCOMP...

FAULTY SPECTRUM? As you are probably aware from press reports Sinctel's Computers no

longer have a repair department. Our computer repair workshop has been an OFFICIAL Sinclair Repair Depot for the past six years and we are pleased to announce

that we will continue to do your out III guarantee repairs as in the past Send your faulty computer DIRECT SPECTRUM

F18 75 les parte £11.50 inc perte CR 95 Inc parts

INTERFACE 1-11. ESS.75 Inc parts CALL OR SEND WITH CHEQUE OR P.O. T.V. SERVICES OF CAMBRIDGE LTD

FRENCH'S ROAD, CAMBRIDGE CB4 3NP Tel: 0223 311371

SPECIAL OFFERS!

Now open! 'Computer Repair Dept': Faster & cheaper than the average (90 day warranty).

THERSBY COMPUTERS

26-28 Bowesfield Lane, Stockton, a Cleveland TS18 3ER Tel: (0642) 604768

SINCLAIR COMPUTER REPAIRS * SPECTRUM/PLUS COMPUTER £12.00 REPAIRS..... (Special Offer) * SPECTRUM (RUBBER £8 50 KEYBOARD) REPAIR .. (Snecial Offer) * SPECTRUM PLUS KEYBOARD REPAIR.. £12.00 (Special Offer) SPECTRUM 16K/48K AND KEYBOARD REPAIR ... £20.00 SPECTRUM PLUS AND £23.00 KEYBOARD REPAIR ... INTERFACE ONE REPAIR. INTERFACE TWO REPAIR... £17.00 MICRODRIVE REPAIR..... £17.00 SPECTRUM/PLUS POWER PACK ... (with new replacement)

COMMODORE C64, C16/PLUS 4 VIC 20.....Price on application

All prices are fully inclusive of labour, parts, postage and packing, and VAT, Send cheques or postal orders with computer only, unless

CALLERS MOST WELCOME, OPEN 9.00 AM-6.00 PM MONDAY-FRIDAY

I. T. WESTERN ELECTRONICS UNIT FZA & F3. AVONSIDE ENTERPRISE PARK NEWBROUGHTON ROAD, MELKSHAM, WILTS. TEL: (0225) 705017

40/POPULAR COMPUTING WEEKLY

£15.95 inc parts

outy.

TOP COMPUTER GAMES

	_		_				_
CBM 84/128		AMETRAD		SPECTRON	1	1216	
Thei Boxing	5.50	Sam Fox Strip Poker	H 50	Templeter	8.00	Any Ultimate	5.90
Cream Recat	5.00	Batman	II 50	Staniess Steel	5 00	Macadam Bumper	5 00
Miano Vice	5.00	Way of the Tiger	6.00	Green Benet	4 00	Al Known Boms	11.95
	6 60		5 50	Seamen	4 00	Way III the Tiger	6.00
1942	8 60	Paperboy	5.50	Kung Fir Master	4 00	Szervásia	6.00
Paperboy	8 80	Seboteur	5.50	Serry McGucan	5 00	Zoids	5.00
Seper Cycle		Kright Games	5 50		5 00	Jack the Nipper	6.00
Interacor	5.50	Move		Traval Pursun			4.95
Alleyket	5.50	Lord of the flings	10.00	T.T Racer	5 50	III) Karate MSXTEA (Completon)	8.00
War	5 50	Tomshiret	7.00	Solit Personalines	5 00	Sam Fox Strip Poker	7.00
Trival Purset	8 00	Cice + Transer	IRE 00	Altry Ultrimate	\$ 00		6.00
Fest 2	7.50	Jack the Noper	8.00	Dragon & Law	5.00	Orle Wei	
Leaderboard	5.50	Rambo	5 50	Resource	4 00	Exploding Fist	6.50
	5.00	Ghass 'e' Gobles	II.50	Yie Ar Kung Fu	5.45	Lazy Johns	4.95
Stranthonk	5.00	Dan Daré	7.00	Super Bowl	7.00	Dambusters	7.00
Way of the Tiger	5.00	Mightgunner	6.00	Gunfright	7 00	Nobbet	10.00
Graphic Adventure Creetor	12.95		6 00	Tomahawk	7 50	Valleyms (with speech)	6.00
	5.00	Super Cycle	7.00	The Prem	6.25	Confused	7.95
Hecker 2		Tay Can	6.00		6 00 1	Pace of Meac	7 00
Sanarso	6.50	Return to Cir		Gerry the Germ	5.95	North See Helicopter	5.00
Footballer of the Year	6.50	Rebel Planet	7.00	Combat Leta	5.95	The floss	4 00
Dronds	5.50	Rock 'n' Wresde				Made	6.00
Crystal Coarles	5.00	Timosi Paysust	8.00	87686	6	Hole-in-One	10.00
Movie Monater	6.00	Vers Couz	6.00	Soy as Soy 2	6.00	Nois	5.95
It's a Knockout	5.50	A CART CART	6.00	Football Mesager	5.00	Eddin Kund	
Liche-Mass	7.50	Gebren	E 50	Smash Hits	2.00	Mandregore	10.00
	5.00	Winter Comes	9.00	Any 3 Magazzone	4.00	Snooker	5 00
Paggles	4.95	Super Bose!	H.50	Grusada in Europe	10.00	Way of the Frohter	6.50
Rombjack Cauldren 2	6 00	Turbo Expris	6.00	Asylum	5.00		
			6.00	Routifier(su)	5.00	BBC + ELECTRON	
Ghosts 'it' Geblins	6.90	Swords and Sorcery	5.00		5.00	Figs + Transper	10.95
Lord ill the Rings	9.95	Yie Ar Kung Fu		Elektra Glido	5.50	Exploding Fish	7.25
Spindezy	6.00	Combet Lynx	8.50	Fighter Páot Moderny	5.90	Exploding Hist Communico	7.25
Combat Lynx	6 50				5 00	Tripal Purnet	12.95
Hardball	6.00	E16/+4		Bullotazor	5 00	Amenty Amenty	8.95
Dragon's Lar	5.50	Bernback	5.00	Whetysunds			7 25
Portue Trooper	6.00	Commando	5.00	Tornatuws.	7.00	Bombjack (MIC)	8.95
Jack the Noper	6 50	Frenk Bruno	1.00	Sent Service	9.95	Bruce See RBBCI	6.95
Streke Force Cobra	5 00	Arrest	4.50	Any Utomato	6.00	Block Bussers Gold-Run	
Year Door	5.50	Ace	5 50	Mercenary	4.50	Yee At Kung Fa	8 95
Sam Fex Sons Poker	5 50	Dyty Den	4.50	Second City	4 50		
Krasht Roler	5.00	Mercenary	6.00	Colowispace	4.95		
Pub Games	6.00	Second City	5.00	Great American R R	6.00		
Dembusters.		Windledon	3.50	Zorn	6.00		
Fice + Tommer	9.00	The Hulk	2 50				
Freezo Frame (Cart)	30.00	Souderman					

ALL ORDERS SENT WITHIN 14 DAYS. PLEASE MAKE CHEQUES/P.O.8 PAYABLE TO G. JOHNSON

IOHNSON ENTERPRISES

262A UTTOXETER ROAD, LONGTON, STOKE-ON-TRENT, STAFFORDSHIRE ST3 5QL

GOLDMARK SYSTEMS UTILITIES FOR THE AMSTRAD

LORD OF THE BINGS

Side 1 of our conversion cassette will AUTOMATICALLY

cassette £4.00

SPEED-TRANS SPEED-TRANS is specifically designed to transfer many pro-grams that have been protected with the SPFEDLOCK protec-

TRANSIT

The utility by Pride will copy individual files up to 42K in length from drive A.A. A.B. B-8 and B-A. IT DOES NOT RECUIRE THE USE OF CPM and m a necessity for those with a 53 second drive.
It is menu-driven and is easy to use it is TRANSMATable to

cassatta £4 00

cassette £5.50

VIEWTEXT This utility by Pride will allow you all see the text in a BINARY file.

cassette £3.00

WHY WAIT AGES FOR YOUR PROGRAMS TO LOAD -

UK prices shown. EUROPE add £1.00 per title. REST OF WORLD add £1.50 per title. We accept EUROCHEQUES (Sterling

GOLDMARK SYSTEMS, 51 COMET ROAD, HATFIELD, HERTS, ENGLAND. Tel: 07072 71529 ANYTIME. 114

The ONLY way to buy software an Speech Synthesian Light Pan 1 95 PRINCIPAL DEVENT NY IT PAYS TO USE PRICESUSTED

OL - WORLD CHESS

Got Psion Chess? You have got the best programme. Now get the best games. All 24 games of the 1986 World Chess Championship on microdrive, with analysis.

Send 15 cheque/P.O. m P CRADDOCK P.O. Box 88. Twickenham TW2 5BR

CHARITIES. Software writt specification for Spectrum 48/+ or Very cheap. Contact Mike Roos, 22 Wood

STOP PLAYING GAMES

Westlink Premotions 48 Great King Street Edinburgh EH3 6QY

COMPUTER WORKSHOP: Crovdan YMCA. For beginners and levels Every Saturday Tel: 01-651

BBC OWNERS * 25% OFF R.R.P. *

THRUST ONLY EX.75 (duc), EX.95 (reg

DILLAP BOX SOFTWARE

net and larger are less 4.5 r. Name 126 companies 453

SCRARGLE 54.00 Tayword 2

OL BACKUP SUITE V5.3

10, sec. Service Denote anotable files, to the control of the late. Some strongs or fire days responsible EPROM's from order.

Tracey window editor 100K to 5.5 to Sieve Jones, 217ASOFT, 83 FOXEOURNE ROAD, LONDON TWY17 85N.

AMSTRAD CPC Planets continues

UNIQUE" drawing system for Spectrum 48K-plus programmers 2, a new way of drawing DATA. On cassatto, just £1.50 post free, Y. T. Senions Ind. R& Grand Avenue, Lend-

ATARI 1040ST, plus 14" plus 10MB HARD DISC, plus MOUSE, 10YSTICKS (2).

SOFTWARE, PLC TOTAL WORTH OVER £1800 Ouick sale needed £1000 Tel: 01-386 8021 anytime DON'T MISS THE BOATS!

RECTHER FP/44 electronic type Cost (240 May 1988 Will sell for



ATARI 1040ST, olus 14° ATARI 10MB HARD DISK, plus MOUSE, JOYSTICKS (2) SOFTWARE OF TOTAL

WORTH OVER £1800. Ourck sale needed £1000 TEL: (01) 386 8021 ANYTIME (elenos)



SIGMASOFT character-set collec-

CHARANTEED WINS & GUARANTEED WINS & GUARANTEED WINS ASIRUS SOFTWARE presents the most up to date method for winning the POOLS

even devised. So much se that the conjumy has decided as LIMIT the number fit copies available to 3,000 which means it is FIRST COME FIRST SERVED. Whatever method you have used in the past, whether it be FORM, MAGE, NUMBERS, or UNIVERSE OF DATA you can over forget. WHY! he because POOLSMASTER altrinates all EMANCE, going you method which can be used All YEAR MOUND, with consistent centures of (DMONE MS).

Developed over the next 2 years accuracy was our airr in finding a WINNING method. weeds, and asless to PODLSMASTER, Coupled with easy to follow on scatters in-structions, which enables the user to see how PODLSMASTER operates, and why it weeks, and also showing how to STAKE and PERM your coupons to give MAXIMUM. returns, mailing it a complete package

To obtain a copy of POOLSMASTER, and remember there are only 3,000 copies available, full in the form below and together with a remittance of £30 send to

ASIRUS SOFTWARE 54 Boverhouse Road, Putney, London SW15 SAU

PCs/cheques payable to ASIRUS SOFTWARE price

GUARANTEE

ASIRUS SOFTWARE guarantees that PODLSMASTER will give you is winning devidend devidends within 12 weeks or less. Should PODLSMASTER not perform as

POOLSMASTER is averlable for: ALL SPECTRUMS, ALL AMSTRAD CPCs. ALL BBCs, and COMMODORE 64/128 (all programs supplied on

Lanciona chaqua/P III for f



Paytoode

PLEASE ALLOW UP TO 28 DAYS FOR DELIVERY

POOLSMASTER © 1986

CASPER THE INFORMATION BANK

OFFERS YOU YOUR OWN PERSONAL ONLINE MAILBOX

80 COLUMN VIEWDATA SYSTEM AVAILABLE 24 HOURS

CASPER, 23/25 PRAED STREET, LONDON W2 1NT NO OTHER CHARGES 300/300.1200/75.1200/1200.2400/2400.BAUD

C16 + PLUS 4 OWNERS "20 USER"

he only Magazine dedicated to Commodore C16 and Plus 4 Users is -20 USER C18 Plus 4×20), the official magazine of the C16 B Flus 4 Users (bib. For too long one CB and Plus 4 Users have been treated badly by the majority of the Computer response, now while the advance of this class. C16 Plus 4 owners can get the most out of ther computer's "20 USER" is a monitory magazine which features \$\mathbb{Z}\$ the latest \$C18\$ and Plus 4 nows, reviews of the latest bandware and software features, articles, paragram hiptors, resides features, compatitions, special offers, adventisements from trade advertises and much much much much much much series.

Inflation, resident inflation, compressions, opening out on the case of the EP Res. 4 Uses CLAB, one was interpreted to CLO USER yet between joint the CTB & Ples. 4 Uses CLAB, one was interpreted to compress on the case of the case

SOFT

C16 & PLUS 4 USER CLUB (20 USER). C70 MICRO MEDIA. 42 MOUNT STEWART STREET. CARLUXE. LANARKSHIRE. MUS 558

ARE YOUR PRODUCTS
REVIEWED IN "20 USER"? II
NOT THEN YOU ARE MISSING
OUT. SEMD YOUR LATEST
PRODUCTS FOR REVIEW IN OUR

here's a Dealer near you INCROWAY COMPUTERS 10 HIGH STREET

RAINHAM, KENT

Tel: (1634) 375702

IIII CHARTWELL WORTH VICTORIA CIRCUS SHIPPING CENTRE SONTHEND ON SEA Tel: 10792) 614131

HORLES

14-17 FASTERN

ESPLANADE

SOUTHEND-ON-SEA

ESSEX

LEEDS @UCCOCCOCC HUNGLARHOUSE HULLES

MARTH STREET LEEDS 157 2M

Tel: 195327 458888 LONDON

BALLERY SOFTWARE 1st FLOOR THE ARNDALE CENT. WANDSWORTH. LONDON SW18 Tel: 01-870 4941----

> GAMES WORLD 129 KING STREET

Tel: (0702) 63377/8 GLASGOW

THE COMPUTER DEPOS 205 RUCHANAN STREET BLASSOW 61 257 Tet: (041) 332 3944

MEGARYTE

12 FTTRICK SOUARE

CHMRERNAULD

III 1ND

0236 738398

578

HAMMERSMITTH LOWDON WS Tel: 05-741 4457

WIFLITE SPECIALISTS IN AMSTRAD PCW8256 - PCW8512

SOFTWARE & HARDWARE MENDETHIR MINISTER CONTRA 131 MOUNT PLEASANT LIVERPOOL L3 STE 051-709 0123/708 8775

Software Design Service Available Microbute We talk business not hits & bets NO. 1 ON MERSEYSTOE FOR ATARI AND AMSTRAD 21 SEAVIEW ROAD WAILASEY

MERSEYSIDE L45 40W

(051) 630 6933/638 1470

10 am - 6 am

INTERCHIP 3 MILLER STREET

Tel: 041-248 6667 Dealers for Amstradi Atari and PC clones and

KENT

ANIROG COMPUTERS III Wad Hill Darffeni Kent Tel: (0322) 91649

MAR OFFICER SERVICE AVAILABLE

YORK COMPLETER CENTRE 7 STONEGATE ARCADE YORK Tel: (0964) 641862

THETEORY MICROS SPECIAL ISTS -COMPUTER REPAIRS

THETE I WHIT INC. 19 THETENED MARKE I FIREST FIRES

HEREFORBSHIRE

WOWEYSETT COMPUTERS 17 LINKON STREET HEREFORD HR1 287 Tet: (8432) 279404 III ASSIST CLUMKER SALE

RFY

LILTIMA IINIT 28

WHITE LION WAS K GIIII DEORD

(0483) 506939

SCOTLAND

FOR BARGAIN DISCS CALL

GRABACOIN 9 LOW ROAD CASTLEHEAD, PAISIFY PA2 6AQ Tel: 041-889 0885

ACORN ELECTRON with two disc drives plus one Rombox. Joysticks. Rom and tape s/ware, books and mags. All excellent condition, worth III 99/4A MINI MEMORY £30. Logo 2 Edisor Assembler £20, Assembler manual only £12. Number Majic, Mission Impossible, Voodoo

BT17 SBA. Tel. 0232 523001

SPECTRUM PLUS VYX5000 mg EINSTEIN + green colour monitor

Financia basic, BBC basic, Logo Word (basic), umities, games, built-in disc drive, £375 Contact Peter D952

ATARI 1040 STF + H-Res mono moneor and basic in Rom includes Ignor (*1150+), (900, Tel Bill 01-572 WANTED: Desc investment drive for

microdines, swelve cartridges with lat SHINWA CP80 tookatike but called Cosmos 80 Cracked cover, slight ing order. Centronics with lead, man ual and paper W/N deliver in London. Tel Ian 01-530 4333. BBC B. 1-2 OS, basic 2, data record-

er, games books and mags V.g.c. (250 Tel 0372 378897 giter 6pm

ATARI BOOXL, 1050 drive XCI cas 64 - offers Tel 086 671 4304 QL complete CST dust disc system

ATARI 1050 disk draw with Heppy Enhancement, £200 Atan 810 diac three with Happy Enhancement and ATARI 520 STM, plus Cumenia 1MB disc dime, plus software, plus

discs, plus monter lead All bought Sept 1986 and perfect, £640 quick sets Tel Jim 01-771 9115. C64 disc drive, cassotte, joystok software worth over £700, includes

WANTED CBM 64, C2N, disc drive

DLIVETTI ink jet printer, 2 months

Spectrum 48K, lots of peripherals, honks software, ex-programmer's system Also CBM 64 system Cost in total £1400. All in v.g.c Must sell

queckly, only £450 p.n.p. Tel: 0656 COMMODORE MPJ-801 printer for sale, hardly used, in original box with manual and paper, only £100. Tel 0932 55107 ar write J.R., Corinth

House, Broad Highway, Cobham, Sur-rey KT11 2RR. CBIII 64, disc drive, 1541 Express tape deck, printer, plotter, modem, ill 0274 308493 or 0274 573981 eve

nings. £400 p.n.o

New Releases

John Cook looks through this week's new arrivals

Amstrad CPCs

Program Prodigy Type Arcade Adventure Micro 464/664/6128 Price £9 99 tape, £14.99 disc Supplier Electric Dreams 31 Carlton Crescent, Southamnton SQ1

Program Doomdark's Revence Type Adventure/Strategy Micro 464/664/6128 Price £9.95 tape, £14.95 disc Supplier Beyond, 74 New Oxford Street, London 187.1

Program Speed King Type Simulation Micro 464/ 664/6128 Price £1.99 Supplier Mastertronic, 8-10 Paul Street, London FC1

When it was released on the Commodore 64 a couple of months ago, Speed King quickly became one of my

Now out on the Amstrad it's lost very little in the translation. It's still fast, addictive and packed with features There are ten international

circuits to test all your skills to the treacherous turns of Daytona

The graphics are only a little gruder than on the 64 - still colourful and very nicely

There are quite a few more expensive race games around at the moment, but they offer very little more for the money.

Speed King must be the



Program Formula One Simulator Type Simulation Micro 464 Price £1 99 Supplier Mastertronic, 8-10 Paul



Program The Eidolon Type Arcade Adventure Micro 464/664/6128 Price F9 99 tape, £14.99 disc Supplier Activision, 23 Pond Street

Program Street Hawk Type Arcade Micro 464/ 664/6128 Price £8.95 Supplier Ocean, 6 Central Street, Manchester M2 5NS

Program Bactron Type Arcade Micro 464/664/6128 Price £9.99 tape, £14.99 disc Supplier Activision, 23

Program Space Shuttle Type Simulation Micro 464/664/6128 Price £9.99 tape. £14.99 disc Supplier Activision, 23 Pond Street, London NW3

pace Shuttle has been around for quite a while - notably on the Commodore 64 where it made its appearance around two years ago. So, the Amstrad version has been a long time coming. How has the conversion stood up? Graphically, the game is excellent with a colourful display

consisting of an out-thecocknit view various control panets and mini-displays, and some excellent animation on I assume it's also very real-

istic. Which is to say, dull. The whole point about fly-

The Pawn Shop

of the screen.

Program The Pawn Type Granhic Adventure Micro CBM 64 Price £19:95 Sup- band, and the complex conplier Rainbird, 74 New Oxford Street, London WC1

his is the adventure for people who hate adventures. At last transferred from the airy heights of the 68000 - QL. ST. Amiga to a micro within the reach of ordinary mortals. The Pawn survives the transition not only well but astonishingly

In many ways a straightforward text 'n' graphics adventure. The Pawn is transformed by an unusually powerful perser (text interpretation system) and a deranned sense of humnur None of your two-word commands and endless "I don't understand that" - the most complex English sentences usually based on in-inkes can be interpreted and acted upon, and the computer will plemented REM Statement always come up with a sensi-

ble reply is just a computer game. pot, then get all the garden parsers, graphics, and proand go north" are acted on the 64 without a qualm by the computer.

ing the space shuttle is to follow a flight plan to the last detail So all you have to do is keep your flight path as near as possible to the pre-ordained version. Landings are quite gripping.

as you jockey to keep the machine on line, but even here the povelty soon pales Real shuttle flying is proba-

bly quite exciting, since - as we know - the stakes are the highest imaginable. When the redo the launch sequence yet again, and the only reward for success is the pretty screen display, there's not a lot to

Make believe spaceships as in Elite or Mercenary - or ordinary aircraft simulations

Atari ST

Program Hacker // Type Ad-

The plot involves your quest to remove a silver armspiracies into which you are unwittingly drawn

Bob Stephenson's graphics are as charming and stunning as those on the ST/Amiga version, and to make up for the lack of pull-down scrolls there's an ingenious "camen" feature which can insert miniature versions of the current location picture at the top

Forthcoming is a CBM 128 version on a single disc. which is faster and can display 80-column text. Both versions include the off-thewall novella "A Tale of Kerovnia" which will introduce you to Gringo Baconburger, their Roohikyoub Dyarves, the effectual Prince Malcolm.

The game's humour is the Irrelevant Maze, the Linimand should have both hardened adventurers and neo-You tend to forget that this phytes chuckling into their mead. For all that, this is a when commands like "take challenging adventure and the plant, plant it in the plant sets new standards in

> Take gold to software shop - buy pame

venture Micro Atari STs Price £24.99 Supplier Activision, 23 Pond Street, London NW3

Program Tass Times in Tonetown Type Graphic adventure Micro Atari STs Price £24.99 Supplier Activision, 23 Pond Street, London

Program Shanghai Type Strategy Micro Atari STs Price £24.99 Supplier Ac-

Commodore

Program Black Hawk Type Arcade Micro C64 Price £1.99 Supplier Sparklers, Unit B11 Armstrong Mall, The Summit Centre, Southwood, Farnborough, Hants GU14 ONP.

Program GBA Championship Basketball Type Simulation Micro Commodore 64/128 Price £9.99 tape, £14.99 disc Supplier Activision, 23 Pond Street, London NW3.

Sports simulations came into vogue about two years ago, and there's still no sign that they're about to go out of favour.

to go out of favour.

The latest is Two-on-Two
Binsketball from US company
Gamestar, producers of the
wonderful On-Field Football.

Distributed by Activision, Basketball is a tour-de-force with splendid animated graphics, excellent gameplay, and enough strategy to keep you interested.

You can name your own team, choose a second player

CAMPETAR*

as your team-mate, allocate

skills to dribbling, stealing,

compete in a league against a

number of teams at different

ckill lovele

Program Hacker II Type Adventure Micro Commodore 64/128 Price £9.99 tape, £14.99 disc Supplier Activision, 23 Pond Street, London NW3.

Program Snodgits Type Arcade Adventure Wicro Commodore 64 Price £1.99 Supplier Sparklers, Unit B11 Armstrong Mail. The Summit Centre, Southwood, Famborquish Hants (8114 DNP

Program The Rocky Honor Show Type Accade Adventure Micro Commodore 128 (enhanced version) Price £9.99 tape, £14.95 dis-Suppiller Cfit. 9 Kings yard. Carpenters Road, Stratford. London £15.

special treat for Commodore 128 owners this week: an enhanced version of *The Rocky Horrar Show*, one of CRL's greatest games.

greatest games.
It's an animated arcade adventure based on the cult movie, and the graphics are stunning. By you've been wondering what use all that extra memory was, here's a good answer.

Program Prodigy Type Arcade Adventure Micro C64/128 Price £9.99 tape. £14.99 disc Supplier Electric Dreams, 31 Carlton Crescent. Southampton SO1.2EN.

Program Senzion Type Arcade Micro Commodore 64 Price E9.95 tape, £14.95 disc Supplier Thalarmus, Front Office, First Floor, Advance Works, 44 Wallace Road, London N1 1PO.

Program Assault Mechine Type Arcade Micro Commodore 64/128 Price £9.95 tape, £12.95 disc Supplier Nexus, DSB House, 30 High Street, Beckenham BR3 1AY.

Program Tass Times in Tonetown Type Graphic Adventure Micro Commodore 64/128 Price £19.99 (disc) Supplier Activision, 23 Pond Street, London NW3.

Program Shanghai Type Strategy Micro Commodore 64/128 Price £14.99 (disc) Supplier Activision, 23 Pond Street, London NW3.

Program Street Hawk Type Arcade Micro Commodore 64/128 Price £8.95 Supplier Ocean, 6 Central Street, Manchester M2 5NS.

Commodore Amiga

Program Hacker II Type Adventure Micro Amiga Price 624.99 Supplier Activision, 23 Pond Street, London NW3.

Program Tass Times in Tonetown Type Graphic Adventure Micro Amiga Price £24.99 Supplier Activision, 23 Pond Street, London NW3

Program Shanghai Type Strategy Micro Amiga Price £24,99 Supplier Activision, 23 Pond Street, London NW3.

Spectrum

Program Black Hewk Type Arcade Micro Spectrum 48K Price E1.99 Supplier Sparklers, Unit B11 Armstrong Mell. The Summit Centre, Southwood, Farnborough, Hants GU14 ONP



Program Prodigy Type Arcade Adventure Micro Spectrum 48/128K Price £7.99 Supplier Electric Dreams, 31 Cariton Crescent, Southampton SQ1 2FN

Program Dragon's Lair Type Arcade Micro Spectrum 48/128K Price £7.95 Supplier Software Projects, Bearbrand Complex, Allerton Road, Woolton, Liverpool, Merseyside L25 7SF.

Program Street Hawk Type Arcade Micro Spectrum 48/128K Price £7.95 Supplier Ocean, 6 Central Street,

ne of the longest-running sagas in the software business has been the coming soon story of Ocean's Street Hawk. Well, it's here at last and sadly it must be said that it wasn't worth the writ

You drive this motorbike, see. And the screen scralls from top to bottom, while other vehicles drive from bottom to top.

Some of these vehicles are baddies which you should zap with your laser. If you civilians, the police come after you. If you hit anything, you lose damage points.

you lose damage points.

Every once in a while, you get a shift of scene to the outside of a liquor store (an off licence, to you and me).

off licence, to you and me).

This must be a big store because it takes about ten blokes to rob it. Their punishment for this villainous activity in disintegration with your laser. Then it's back on the bike for more car shooting.

Frankly, it's awful. The graphics are nice, but sooo slow. When you're supposed to be doing 120 mph, the screen crawls along. A gran-



ny in an electric wheelchair would give Street Hawk a good run. Superficially similar to Sov-

Superficially similar to Spyhunter, but nowhere near as good, Street Howk should have been buried and forgotten.



QL/Brother explained

urther to the problems concerning connection between the Sinclair QL and the Brother EP44 printer (Popular, May 1, and Letters, July 31). I too have sweated

Yable 1 - EP44 Settings
Bad Rate
Bad Rate
Bit Length
B B Party
New Line
Code (nun programs in all 3)

blood trying to achieve the desired results.

desired results.

The EP44 is supplied in many different character versions, not all of which are shown in the handbook and dependent on the country of purchase and this article may well be helpful to overseas

readers.
Before selecting the final

data code settings (7-bit. 8-

bit or T/WI for the EP44 and

the Install, Bas data for Quill, it

is a good idea to switch the

EP44 to terminal mode and

Z. SAV A. TOW Move

Table 2 - Install Bas

then run the simple Program X, to establish the character set available in each data code setting. Compare with the handbook to find out which version of the EP44 you have the 7-bit setting its probably best disregarded for

if all the characters required are printed in the T/W setting, then this is the best choice, being the only way to

achieve sub- and superscript. The best option, is my opinion, is to utilise the 8-bit more personal more personal

(table 3).

In 8-bit mode, of course, superscript and subscript are not
available, but this
is a minor disadvantage. The Install Bas data for
this mode in then
acceptable in the
form recommand-

of the OI manual

ed by Barry Ashfield (May 1), but I am surprised he makes no use of a 'bold' function, which

I find particularly useful.
The only essential transletion in the *Install. Bas* routine is Berry Ashfield's Translate 1 to enable the £ sign to lie printed normally. I would recommend that the *Install. Bas* data (table two) be used for the 8-bit mode setting, with additional translations to suit individual needs.
Finally, in case of difficul-

ties, I have always found the staff of Brother in Manchester (061-330 6531) to be very helpful, particularly Days

Stockley

International.

of Brother

| Section | Sect

NEXT WEEK

Special Supplement The Commodore 64

Commodore's Connoisseur's Compendium - this year's package deal on the new 64C machine. Chris Jankins takes his pack to pieces... disc drives: the 1541C compared to First-Line's independent Commodore 64 drive, the Enhapper 2004.

... Plus software galore: programming utilities — which will suit you best? Wigmore's Artist 64 – how does it compare to current graphics programs? Print Shop from Precision — a document designer par excellence? The Pawn arrives on the 64 – has the standard been maintained?

Tune in next week for the

Chess Board

More moves in Popular vs Colossus game, and Martin Bryant's monthly column. A must for chess fans.

Games

Feast your eyes on these reviews: Deep Space and Arena from Psygnosis; Aliens and Dandy.

Hackers





